

PROCEEDINGS

of the American Society

of Civil Engineers

INSTITUTED 1852

VOL. LII

MAY, 1926

No. 5

CONTENTS

Society Affairs.....	Page 331
Applications for Admission and Transfer.....	Page 135
Reports, Papers, Discussions, and Memoirs.....	Page 825

This Society is not responsible for any statement made or opinion expressed
in its publications.

Published by the American Society of Civil Engineers at its Headquarters, 33 West Thirty-ninth Street, New York, monthly except June and July. Edited by the Secretary, under the direction of the Committee on Technical Activities and Publications. Reprints from this publication may be made on the condition that the full title of Paper, name of Author, page reference, and date of presentation to the Society, are given.

Copyrighted 1926, by the American Society of Civil Engineers. Entered as Second-Class Matter, December 14, 1879, at the Post Office at New York, N. Y., under the Act of March 3, 1879. Acceptance for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917, authorized on July 5, 1918.

Printed in the United States

Subscription \$8 per annum

PROCEEDINGS

SOCIETY AFFAIRS

CONTENTS

Items of Interest:

	PAGE
Summer Meeting, Seattle, Wash.....	331
Increasing Size of Society's Publications.....	331
Meeting of Executive Committee.....	332
Improved Status of the Sanitary Engineers in the United States Public Health Service.....	332
John Fritz Medal to Edward Dean Adams.....	333
Endorsements for Junior Membership.....	334
The John Ericsson Medal.....	334
Employment for Graduate Students.....	335
Society Appointments.....	335
Student Publications.....	335
Officers of United Engineering Society for 1926.....	336
Prince of Wales Commends Civil Engineers.....	336
Fishing for Facts; or the Engineer's Education.....	337

Local Sections:

Buffalo.....	340
Cleveland.....	340
Colorado.....	340
Detroit.....	340
Illinois.....	340
Los Angeles.....	341
Louisiana.....	341
New York.....	341
Philadelphia.....	341
Portland.....	342
Sacramento.....	342
St. Louis.....	342

Student Chapters:

Rice Institute.....	342
---------------------	-----

Engineering Societies Library

Current Engineering Literature

Employment Service

Membership

Engineering Societies Library.....	343
Current Engineering Literature.....	345
Employment Service.....	353
Membership.....	355

AMERICAN SOCIETY OF CIVIL ENGINEERS

PROCEEDINGS

VOL. LII

MAY, 1926

No. 5

SOCIETY AFFAIRS

Summer Meeting, Seattle, Washington, July 14-16, 1926

Main Topic to Be Logging and Lumbering Industry

The application of engineering to the various phases of the logging industry and the manufacture of lumber will be featured at the Summer Meeting to be held in Seattle, Wash., July 14-16, 1926. Interest in the meeting will also be broadened by the sessions of the Technical Divisions which are planning comprehensive and attractive programs.

At the main session on Wednesday, July 14, prominent engineers, lumbermen, and mill operators of the Pacific Northwest will discuss the engineering problems of the industry, including such topics as Logging Engineering, Logging Railroad, Logging Equipment, Electrification of Logging and Mill Equipment, Reforestation of Logged-Out Lands, etc.

On Thursday forenoon, July 15, the Technical Divisions will hold simultaneous sessions. Programs are being arranged by the Construction, City Planning, Highway, Irrigation, Power, Sanitary Engineering, and Waterways Divisions, the programs of which will include specialists in the several branches of engineering from all parts of the country.

In addition to the usual sightseeing and entertainment features of Society meetings, it is hoped to arrange an all-day trip on Friday, July 16, to a logging camp where visitors may see the actual operations of logging and lumbering on a large scale.

The meeting, coming as it does in vacation time, is expected to attract a wide attendance with many members taking advantage of the low summer excursion rates and of the opportunity to visit scenic points of the Pacific Northwest.

Increasing Size of Society's Publications

Including the present (May) *Proceedings*, three issues in succession have been unusually large. This issue completes the first half of the year's publications. Normally the May number should be larger than the average, as there

will be an interval of three months before the next (August) number instead of one month as in the remainder of the year, and every effort is made to clean up the year's work to date as far as possible. The true comparison, however, is in relation to the similar issues of previous years; for example, the first five numbers of *Proceedings* for 1926 are approximately 20% greater in aggregate size than those for 1925, which, in turn, were slightly larger than those in the preceding year. These considerations, together with the additional fact that the Society does not now publish verbatim reports of its general and Board meetings (a saving in itself of several hundred pages a year), point to the really substantial increase in the volume of matter published. It is true that the pages of applications for admission and for transfer are slightly greater, but to counterbalance this, the amount of matter in Society Affairs is much less than formerly, so that the net gain in size may be accredited to the papers, discussions, and memoirs.

The explanation for this most satisfactory development consists in part of the rapidly extending activities of the Technical Divisions, which have resulted in many excellent meetings and have produced many papers to be printed in *Proceedings*. This has added not only to the bulk but to the variety of the publications. With the increase of published matter, however, there still remains a large number of papers awaiting publication, not to mention the numerous possibilities of other valuable contributions still to undergo the scrutiny of the Committee on Technical Activities and Publications. The present situation, gratifying as it is in itself, is only a partial indication of the Society's expanding activities and increasingly valuable accomplishments of a technical nature.

Meeting of the Executive Committee

The Executive Committee met on March 15, 1926, at 10:20 A. M., at Society Headquarters; President George S. Davison in the Chair; George T. Seabury, Secretary; and present, also, Messrs. Chevalier, Hazen, Humphrey, Robert Ridgway, and Treasurer Hovey.

Many important matters were considered among which were a number of appointments of representatives of the Society on various Committees and delegates to meetings of various technical associations. Some of the more important actions taken by the Committee are included elsewhere in these items.

Progress Report of Special Committee on Improved Status of the Sanitary Engineers of the United States Public Health Service

This Committee, appointed in 1924, has been active in proposed legislation to provide the sanitary engineers with a commissioned status, similar to that possessed by the medical officers of the U. S. Public Health Service. In its efforts, the Committee has co-operated with a similar committee of the American Public Health Association.

Early in 1924 legislation was proposed by the Treasury Department to improve the organization of the Public Health Service, providing for a com-

missioned status for the sanitary engineers. Nothing definite was accomplished by the efforts since the Director of the Budget disapproved of the proposed measure and the 68th Congress adjourned before further action could be taken. Senator Copeland, of New York, likewise introduced a bill in the Senate but it was not considered before the adjournment of Congress.

Since the convening of the 69th Congress in December, 1925, the movement to improve the status of the sanitary engineers has more definitely crystallized. The particular action which has developed and which gives some promise of accomplishing the purpose sought by the Committee, is that a group of prominent health workers have conferred with the President and are sponsoring a bill for a thorough re-organization of Governmental public health work, with the present Public Health Service as the nucleus of the organization. The medical and scientific personnel would be on a commissioned status and the sanitary engineers are provided for therein. This bill was introduced in the House of Representatives as H. R. 10125 on March 8, 1926.

After conferring with a number of prominent Senators, Congressmen, and public health workers, it has been decided that for the present, efforts should be centered upon the general re-organization bill and especially those features which provide for the sanitary engineers. If this bill should fail to receive favorable consideration in Congress, it is advisable that a special separate bill for the engineers be introduced in Congress and actively supported. However, it is inexpedient that this be done until the status of H. R. 10125 is determined. This bill has been referred to the Director of the Budget, Gen. H. M. Lord, for his comments. Steps have been taken to urge the Director of the Budget to give favorable consideration to this measure. His decision on the proposed legislation is now (April 5, 1926) pending.

GEORGE W. FULLER, *Chairman*,
MORRIS KNOWLES,
W. L. STEVENSON.

John Fritz Medal to Edward Dean Adams

On the evening of March 30, 1926, in the Engineering Societies' Auditorium, Edward Dean Adams, F. Am. Soc. C. E., surrounded by distinguished engineers of all branches of the profession, was acclaimed as the John Fritz Medalist for 1926 "for great achievements as engineer, financier, scientist, whose vision, courage and industry made possible the birth at Niagara Falls of hydro-electric power". The program was in charge of Frank B. Jewett, Past-President, American Institute of Electrical Engineers, who as Chairman of the Board of Award introduced the Hon. James M. Beck, former Solicitor-General of the United States, and Professor Arthur Edwin Kennelly, as the speakers for the ceremony. Mr. Beck's address was an eloquent appeal for a more generous recognition of men who give conspicuous public service and a warm personal appreciation of Mr. Adams as a man. Professor Kennelly, on the other hand, dwelt particularly upon the engineering accomplishments of Mr. Adams' career, forcefully presenting some of the attendant difficulties and

their successful surmounting. The presentation was made by Fred J. Miller, Past-President, American Society of Mechanical Engineers, after which Mr. Adams gave some personal reminiscences covering the early development of hydro-electric power at Niagara and the details leading to some of the momentous decisions of which time has since proved the soundness. The greeting of Mr. Adams by the large gathering was a spontaneous tribute to his various accomplishments; he gratefully acknowledged that the presentation was the greatest honor of his life.

Endorsements for Junior Membership

The rules of the Society have required an applicant for membership as Junior to submit the names of five corporate members as references with respect to personal knowledge of his experience and ability. By action of the Board of Direction at its meeting on January 18, 1926, this provision of the By-laws is now changed so that only two such references to corporate members are needed. Many of those most interested in the welfare of the young engineer and in the value of "young blood" to the Society have believed that the old restrictions were too severe and militated against the entrance of desirable men of the Junior grade. In many cases they were required to work for several years before becoming acquainted with the requisite number of corporate members. The present requirement, on the other hand, seems to be more reasonable. Usually, the young engineer, if he be a college graduate, can find two such references among his professors; or, if not a graduate and he has not in the course of his experience been associated with two corporate members, it would seem that his experience itself was at fault, and that perhaps he was not the caliber of man desired. By thus helping the ambitious young engineer, it is felt that one of the big obstacles to his entrance to the Society has been removed and that little valid excuse now remains to prevent a young man who is really desirous of joining the American Society of Civil Engineers from doing so.

The John Ericsson Medal

As an engineer, John Ericsson rendered conspicuous service to his adopted country, for which he has been accorded the fame that he richly deserves. Now comes still another reminder of the enviable name he has earned, in the form of a medal, to be known as "The John Ericsson Medal" established by his countrymen, the American Society of Swedish Engineers, to be awarded not oftener than every other year to Americans of Swedish birth or descent, or to Swedish citizens, in recognition of scientific accomplishments. The committee of award will be comprised of four members each from the Swedish Academy of Engineering Science and from the American Society of Swedish Engineers. The medal will be of solid gold bearing the likeness of Ericsson, the inscription of its name and donors, and on the reverse, the name of the recipient "for Distinguished Achievements in Science and Engineering". The first award of this medal, to be made in connection with the unveiling of the John Ericsson

Monument, in Washington, D. C., during the present month, will mark a fitting recognition of one who was at once a great patriot, a great engineer, and a great Swedish-American.

Employment for Graduate Students

Realizing the necessity of developing young men to take the place of the older engineers as time goes on, the Society has recently taken steps to aid the graduating members of its Student Chapters toward desirable employment, by having sent to them the Bulletin of its Employment Service for the months of April, May, and June. To this effort the facilities of the Employment Service lend themselves most conveniently. Its experience for several years has been that the need for men with college graduate qualifications is far greater than the number of applicants for such positions. It has the advantage not only of more plentiful and wider opportunities for employment in the line of work especially desired but—even more important—the recommendation implied in affiliation with one of the National Engineering Societies.

Society Appointments

Members have been appointed to act for the Society in the following capacities:

American Engineering Standards Committee, Sectional Committee on Suggested Code for Floor and Wall Openings, Railings and Toe Boards: Aubrey Weymouth, M. Am. Soc. C. E.

American Society for Testing Materials, Research Committee on Yield Point of Structural Steel: C. W. Hudson, M. Am. Soc. C. E.

Ceremony of Unveiling Bust of Eli Whitney in Hall of Fame, New York University: Robert Ridgway, Past-President, Am. Soc. C. E.

American Academy of Political and Social Science, Annual Meeting, Philadelphia, Pa., May 14-15, 1926: P. M. Sax, G. R. Tuska, and S. T. Wagner, Members, Am. Soc. C. E.

Joint Committee on Stresses in Structural Steel: H. G. Balcom, Clément E. Chase, F. O. Dufour, J. H. Edwards, and L. J. Towne, Members, Am. Soc. C. E.

Society for Promotion of Engineering Education, Committee on Questionnaire Concerning Study of Engineering Education, H. M. Lewis, M. Am. Soc. C. E.

United Engineering Society Endowment Committee: H. deB. Parsons, M. Am. Soc. C. E.; Charles F. Loweth, Past-President, Am. Soc. C. E.; and Ralph J. Reed, M. Am. Soc. C. E.

Student Publications.

It has been remarked that "no organization worthy of the name is complete without an official publication." If this be the criterion, judging by the number and high standing of engineering school magazines, the under-

graduates feel that they should be very worthy of the name of engineer. One of the most recent of these publications, *The Vanderbilt Engineer*, is issued by the Robert H. McNeilly Student Chapter of the Society. This and its many companion magazines, some of them having long and distinguished records, are deserving of the sympathetic support of older engineers—Alumni, Local Sections, and Society members alike.

Officers of United Engineering Society for 1926

At the Annual Meeting of the Board of Trustees of United Engineering Society held January 28, the following officers were elected for the ensuing year: President, W. L. Saunders; First Vice-President, Bancroft Gheradi; Second Vice-President, Lewis D. Rights; Secretary, Alfred D. Flinn; Treasurer, Jacob S. Langthorn; and Assistant Treasurer, Henry A. Lardner.

Messrs. Saunders, Rights, Flinn, and Langthorn are members of the Society of long standing.

Prince of Wales Commends Civil Engineers

The Prince of Wales was the guest of honor at the Annual Dinner of the British Institution of Civil Engineers on March 10, 1926. His remarks, addressed particularly to English Civil Engineers but applying to a large extent to those of other nationalities, were in part, as follows:

"I have been struck very often with admiration for the astonishing achievements by you Engineers all over the earth, and under the earth. * * * No one who has studied the history and the life of our Empire, either with his own eyes or from the writings of others, can fail to see that without the engineer the work of all the rest fails to achieve any permanence whatsoever. We have a very signal proof of this in our own country under our eyes—perhaps I should say under our wheels: the magnificent roads built by the old Roman engineers * * *. I like to think that British Engineers have similarly enriched the world with the monuments of their professional skill * * *. When Britishers see the battlefield of Waterloo or sail past Cape Trafalgar they are naturally thrilled by the spirit of their nationality; but in these days, when this world is beginning to understand and to realize that construction is a far better thing than destruction, it is just as easy to be thrilled when your train crosses the Forth Bridge or the Rocky Mountains, or when you go below ground nearly 7 000 ft. in a Rand mine in South Africa. * * * When I was last in the United States I had the good fortune to visit several big industrial plants and concerns, and I was very impressed by the ingenuity of the American engineers in not only designing but in applying labor-aiding devices. Now, I am not the first, and most certainly I am not the last, to bring back such impressions from that great country, and I emphasize this point, which has been emphasized before, namely, that the United States have set us a very good example in that particular line, because their study of such appliances and their successful development of them seems to have had a good deal to do with their present industrial condition."

Fishing for Facts; or the Engineer's Education

Some Use a Net and Some Dynamite

Abstracted from a longer paper, in the January, 1926, *Technograph*, published by the students of the College of Engineering, University of Illinois.

The craving a civil engineer feels for any scrap of information from which he may predict natural phenomena tends to develop in him an insistent hunger for anything that resembles a fact and may lead to a wolfish and gluttonous attitude of mind—a gobbling up of every statement or opinion, figure, or formula, indiscriminately and incessantly. The result is often intellectual auto-intoxication from “hunks and gobs” of unselected, undigested, and undigestible material. Rather the civil engineer needs to select very discriminatingly his mental diet; and when he goes a-fishing after facts, he wants a fish-fry and not a chowder.

His fishing trips are often long and arduous and it is important that he take along only the simplest and most valuable equipment; complicated toys, however beautiful, are to be avoided on his mental journeys. Definitions of terms are like the names of towns along the way, mathematical relations make a sturdy canoe to bear him, and desire for engineering facts drives him on. At last he finds his country, a land of lakes and rivers, teeming with fish—facts of nature borne on by the unceasing current of natural phenomena, all sorts of facts, some useful and some useless to him. And he spreads his net and catches them and selects what he wants and uses them. And later he often tells about it after the manner of all fishermen.

The net which catches mental fish is made of questions bearing on the subject studied. Hence, a trained man in collecting information begins first by collecting questions rather than by collecting data. Indeed a man's knowledge of a subject can be gauged better by the questions he asks than by the answers he gives; and there is no surer mark of ignorance than assurance of complete knowledge. When a subject is first studied, the number of questions is few, the mesh of the net is large, and many important facts slip through unobserved, but if the student is wide awake each new fact adds new questions, and as the data are reviewed new facts are perceived and are held fast in the mesh. At first the net is not very well made and at this stage too many facts may be bad; for the net cannot hold a large number of fish even if it catches them. If the threads are made stronger, however, if the questions become more clear and definite as the study proceeds, the net will eventually hang each little fact by its gills and all the trout or perch or catfish can be strung on separate strings and eventually put in the frying-pan of design. If the net is not allowed to rot, but is turned over in the sun occasionally, it is all ready for another fish-fry some other day.

Of course there are other ways to have fish-frys. You can dynamite a pond; that is “messy” and ruins the technique of the fisherman. Or you can buy several barrels of assorted fish and see how you like them; they may be spoiled

if you do not know the man who sold them. And you can, if you like, go to a restaurant. But we were talking about how to be an engineer, not how to use handbooks.

To drop this metaphor, these last three ways of having a fish-fry correspond in reverse order to three definite tendencies of our minds, all based on the same motive. They may lead—and often do lead—to definite mental ailments, the pathology of which is characteristic and important. Most of us will go to any amount of trouble, effort, and inconvenience to avoid the supreme agony of concentrated thought; and yet we know that no trouble or effort or inconvenience can avoid the final need of it. And so from fear of mental exercise we become exposed to the maladies of formularitis, translatisis, and experimentalitis.

Formularitis appears at every age, in every clime, in every field of thought. It attempts to reduce cases to formulas; then we congratulate ourselves that we are all through with that group of cases and do not have to think about them any more. Now every one tries to get some general rules to go by and so avoid the need of thinking every thing out from the beginning each time. In fact, such general rules supply excellent material from which to spin the skein of questions which make a mental fish net. And often it is convenient to state these general conclusions in symbols or catch phrases without adding a list of all the detailed limitations and exceptions. Every one who ever propounded a formula which benefited any one except a manufacturer of print paper fully realized all this; but a sufferer from formularitis cannot understand it. A formula for bond in a reinforced concrete beam is to him a formula for bond in a reinforced concrete beam and if the faces of the beam are not parallel, he cannot help it. If some one stated broadly the truth that all men are born equal, he knows what equality is—like two plus two equals four. Formularitis, though extremely common and sometimes epidemic, is rarely incurable in civil engineers; vigorous mental exercises in the fresh air of natural phenomena is recommended.

Translatisis is imported. It consists in exaggerating the value, importance and credibility of facts because they came from a considerable distance and were imported into English with considerable effort. Of course it is very desirable that all facts bearing on our work should be at hand from the laboratories and literatures of all countries; but, quite unconsciously as a rule, we are inclined to measure the value of information by the distance from which it came and the effort devoted to its translation, as if engineering bore any similarity to postage stamps or tropical orchids.

Some cases are complicated by experimentalitis. The director of the engineering work in a well-known institution once told the writer that if he wanted to know all about reinforced concrete beams—he was a mechanical engineer—he would go down into his laboratory and test some. Experiments are helpful, but not even many experiments on concrete beams would tell a man all there is to know about them—or even all he needs to know for design purposes. There is no field of study that requires more careful training or a rarer intellect than devising and interpreting experiments. There exists at the present

time a vague but prevalent idea that the shortest road to a fish-fry of engineering facts is promiscuous, indiscriminate experimentation—a process of dynamiting the pond of knowledge. But many tests may give few facts and unless well devised they give none that any one can be sure of, and it is not desirable to eat fish “all messed up” with mud and driftwood. Except for the work of a few men of peculiar genius in the interpretation of test data, it is true that the least valuable part of any report of tests is the conclusions. The statistical method is recognized by scientists as an extremely powerful but dangerous tool. Those who have gone astray, however, have done so not by drifting into Mark Twain’s climactic group of liars, but by failing to remember how pointedly true in engineering is Josh Billings’ advice that “It’s better not to know so much than to know so many things that ain’t so.”

HARDY CROSS, M. Am. Soc. C. E.

Detroit—March 25, 1926. This was a joint meeting with the Detroit Engineering Society. The program was provided by the Section’s Committee on the Bearing Value of Soils. Papers which were illustrated by lantern slides were presented as follows: “Geology of the Detroit Area,” by H. A. Smith, State Geologist of Lansing, Mich.; “Design of Foundations with Allowable Bearing Values,” by G. A. Wilson; and “Construction in the Detroit Area,” by Mr. Taylor H. Spencer. Several members took part in the discussion which followed the presentation of these papers, and the Research Department of the University of Michigan expressed its willingness to cooperate with the Soils Committee and to render assistance.

Chicago—January 2, 1926. Annual Meeting. The meeting was attended as a luncheon meeting and was held at the Chicago Engineers’ Club. The following officers were elected: President, James N. Hatch; Vice-President, John Brown; Secretary, W. H. Fisher; Treasurer, E. S. Nettleton. Secretary of the Western Society of Engineers outlined the work of the Engineering Society. The Engineering Society and Director T. I. Gordon discussed briefly the subject matter of the supplementary Progress Report of the Committee on Aime and Activities. Proposed amendments to the Constitution of the Society were also discussed. The Section formally adopted the present rules of the Board of the Section subject to amendments by members of the Section.

February 19, 1926. The meeting was held at the Chicago Engineers’ Club. Mr. J. W. Harris was elected President of the Section to take the place of Mr. James N. Hatch, who was unable to serve. A discussion ensued relative to this before Council on “Comprehensive Investigation of the Park and the Ground System of the National Capital” and “Inventory of Water Resources.”

Local Sections*

Buffalo.—April 6, 1926. The following officers were elected: President, Frederick K. Wing; Vice-President, Lynn L. Davis; Secretary-Treasurer, George Prong.

Cleveland.—March 23, 1926. A meeting was held by the Associated Technical Societies the program for which was arranged by the Section. W. D. Collins, Chemist in Charge of Water Division, Water Resources Branch, U. S. Geological Survey, spoke on the relation of the quality of water to industrial developments. A number of industrial concerns in the vicinity of Cleveland had representatives at this meeting, who commented on their own particular problems along these lines.

Colorado.—March 8, 1926. The meeting was held at the Elks Club, Denver, following a dinner at which 22 members were present. George D. Begole, Auditor of the City and County of Denver, was the guest of the Section, and from him the members learned the sources of revenue as well as the channels of disbursement of the City's funds. Announcements were made relative to the award of a prize of Junior membership in the Society and honorable mention for meritorious student papers.

Detroit.—March 26, 1926. This was a joint meeting with the Detroit Engineering Society. The program was provided by the Section's Committee on the Bearing Value of Soils. Papers which were illustrated by lantern slides were presented as follows: "Geology of the Detroit Area", by R. A. Smith, State Geologist of Lansing, Mich.; "Design of Foundations with Allowable Bearing Values", by C. A. Stilson; and "Construction in the Detroit Area", by Mr. Frederic B. Spencer. Several members took part in the discussion which followed the presentation of these papers, and the Research Department of the University of Michigan expressed its willingness to co-operate with the Soils Committee and to render assistance.

Illinois.—January 5, 1926. Annual Meeting. The meeting was arranged as a Luncheon Meeting and was held at the Chicago Engineers' Club. The following officers were elected: President, James N. Hatch; Vice-President, John Brunner; Secretary-Treasurer, W. D. Gerber. E. S. Nethercut, Secretary of the Western Society of Engineers, outlined the work of the Engineering Societies Employment Service, and Director T. L. Condron discussed briefly the salient features of the Supplementary Progress Report of the Committee on Aims and Activities. Proposed amendments to the Constitution of the Society were also discussed. The Section formally endorsed the present rules of the Board of Direction relative to meetings of Delegates from the Sections. Attendance 43.

February 19, 1926. The meeting was held at the Chicago Engineers' Club. Mr. L. F. Harza was elected President of the Section to take the place of Mr. James N. Hatch, who was unable to serve. A discussion ensued relative to bills before Congress on "Comprehensive Development of the Park and Playground System of the National Capital" and "Inventory of Water Resources

* For list of Local Section Officers, Rules, etc., see 1926 Year Book, p. 88.

of the United States." The question of the division of the State of Illinois between the Illinois Section and the Central Illinois Section was also discussed.

Los Angeles.—February 10, 1926. "The Terminal Plan" was the subject of the meeting and the following projects were presented and discussed, "The Plaza Plan"; "The Central Station Plan"; "The Daum Plan"; and "The Noerenberg Plan". It was stated that a Union Terminal or a revision of the present situation was desirable. A report was presented by the Committee on the Advisability of Revising the Building Code to Permit the Use of Pressed Steel Joist in Class A Buildings. Attendance 152.

Louisiana.—March 8, 1926. Mr. Ralph H. Mann has been appointed Secretary to take the place of Mr. A. B. Davis who resigned on account of removal to Memphis, Tenn. The Section met at a Smoker given at the Chess, Checkers and Whist Club in New Orleans. A supper was held in conjunction with the members of the Local Section of the American Society of Mechanical Engineers. Director J. M. Howe gave an interesting account of various problems met by the Board of Direction of the Society and of the proposed amendments to the Constitution. The assembly then adjourned to a meeting of the Louisiana Engineering Society which was held under the auspices of the American Society of Mechanical Engineers, the four Vice-Presidents of which, Messrs. William T. Magruder, Robert W. Angus, S. F. Jeter, and Roy V. Wight, addressed the meeting on problems encountered by mechanical engineers and by their Society.

New York.—March 17, 1926. The New York Section, in co-operation with the New York and Brooklyn Chapters of the American Institute of Architects and the New York Society of Architects, discussed "Proposed Legislation for Structural Safety". A Bill to promote structural safety had been drafted and adopted in principle by a Joint Committee composed of representatives of seven architectural and engineering societies of the New York Metropolitan District. The following speakers presented papers upon this Bill and the various phases of the problem with which it deals: Messrs. William Cullen Morris, Civil Engineer; Robert D. Kohn, Architect; Charles L. Eidlitz, Chairman, Structural Steel Board of Trade; William P. Bannister, Secretary, Architects Registration Board of the State of New York; and Col. W. G. Eliot, Chairman, Engineers' Licensing Board of the State of New York. The subject was discussed from the floor. The general features of the Bill were heartily approved and the Joint Committee was requested to continue its activities. Attendance 125.

Philadelphia.—February 18, 1925. This was a joint meeting with the Franklin Institute, at which papers were presented on "Research and Experimental Tests in Connection with the Design of the Bridge Over the Delaware River Between Philadelphia and Camden", by Clement E. Chase, Principal Assistant Engineer, Delaware River Bridge Joint Commission; and "The Towers, Cables and Stiffening Trusses of the Bridge Over the Delaware River, Between Philadelphia and Camden", by Leon S. Moisseiff, Engineer of Design, Delaware River Bridge Joint Commission.

March 4, 1926. The meeting was held jointly with the Franklin Institute, the "Delaware River Bridge" having been the subject under discussion. The following papers were presented: "The Erection of the Suspended Structure", by R. G. Cone, Resident Engineer, Central Section, Delaware River Bridge Joint Commission; "The Cable Calculations", by G. M. Rapp, Assistant Engineer, Delaware River Bridge Joint Commission; and "The Construction of the Cables", by H. D. Robinson, Consulting Engineer, New York, N. Y. Attendance 250.

Portland.—January 21, 1926. The address of the evening was given by Mr. Melville Dozier, who spoke on "Government in Business" with particular reference to the construction of public works by the day-labor method. The address evoked considerable discussion. W. H. Kirkbride, Engineer, Maintenance of Way of the Southern Pacific System, a guest of the Section, addressed the meeting giving his views as a railroad man on the subject. Attendance 22.

February 26, 1926. The meeting was addressed by Director E. G. Taber who spoke on the proposed amendments to the Constitution of the Society. The following officers were elected: President, E. C. Willard; First Vice-President, B. S. Morrow; Second Vice-President, C. J. McGonigle; Secretary, A. F. Berni; Treasurer, R. E. Koon. Attendance 16.

Sacramento.—March 9, 1926. E. A. Bailey, State Flood Control Engineer, addressed the Section on "The February High Water in the Sacramento River", which was discussed by J. W. Gross. Attendance, 29.

March 16, 1926. Judge Robert M. Clarke, candidate for United States Senator from California, spoke on "The Colorado River Problems", strongly advocating the construction of the so-called "All American Canal". Attendance 28.

St. Louis.—March 29, 1926. After the business of the Section had been transacted, the meeting was opened to a general discussion of the crime wave and its possible remedies. Much interest was shown in the subject. Attendance 20.

Student Chapters*

Rice Institute.—During the past six months, meetings have been held regularly every two weeks. The following speakers have presented addresses: C. C. Crew, M. Am. Soc. C. E., "Railway Valuation Work"; Mr. Bedenk, "Experiences on Leaving School"; John H. Rafferty, Assoc. M. Am. Soc. C. E., "Modern Highway Construction"; Director J. M. Howe, "Ethics of Engineering with Reference to the Code of Ethics of the American Society of Civil Engineers"; Mr. Watt, "Questions That Arise Upon Graduation"; Mr. Schiller, "The Engineer's Part in the Development of a Project"; P. B. Miller, Assoc. M. Am. Soc. C. E., "Dredging"; Mr. Werline, "Contracts".

The Chapter is taking a leading part in the production of the Annual Engineering Show of Rice Institute and is preparing several exhibits in this connection.

* For list of Student Chapters, Officers, etc., see 1926 Year Book, p. 94.

Engineering Societies Library

The services of the Engineering Societies Library are available to all members who wish searches, copies, translations, etc., or advice on technical literature. A collection of modern books is also available for loan to members in North America, at moderate rentals. Correspondence should be addressed to the Director, Engineering Societies Library, 29 West 39th Street, New York, N. Y., who will gladly give information concerning the charges for the various kinds of work. A more comprehensive statement in regard to this matter will be found on pages 110 and 111 of the Year Book for 1926.

Book Notices*

(March 1 to March 31, 1926)

Die Beweglichkeit Bindiger und Nicht Bindiger Materialien. By V. Pollack. Halle (Saale), Wilhelm Knapp, 1925. 139 pp., 10 x 7 in., paper. 9,80 g.m.

The behavior of loam, clay, colloidal mud, sand, etc., under varying conditions of pressure and moisture is described and information given as to their plasticity, cohesion, and consistency.

Flow of Water in Pipes. By Hiram F. Mills. Providence, R. I., Privately printed, 1923. 236 pp., port., diagrams, tab., 12 x 10 in., cloth. Price not quoted. (Gift of Mr. John R. Freeman.)

During a period of nearly fifty years the author, then Chief Engineer of the Essex Company of Lawrence, Mass., was occupied with a study of the flow of water in pipes. In addition to a critical examination of all the available data, much careful experimental work was done under his direction. The present volume, largely written in Mr. Mills' later years, has been prepared for publication by John R. Freeman, Past-President, Am. Soc. C. E. In it is developed a theory of flow and formulas for the flow of water in straight pipes. Complete records of the experimental data, etc., are given. Mr. Freeman has contributed a short account of the history of the work, and Karl R. Kennison, M. Am. Soc. C. E., an introductory outline.

Handbook of Safety and Accident Prevention. By Fred G. Lange. N. Y., Engineering Magazine Co., 1926. 512 pp., illus., graphs, 9 x 6 in., fabrikoid. \$5.00.

This handbook gives a general view of the entire field of safety work, describes procedure in installing programs for accident prevention and provides references to the literature.

Railway Track and Maintenance. By E. E. Russell Tratman. Fourth Edition of "Railway Track and Track Work". N. Y., McGraw-Hill Book Co., 1926. 490 pp., illus., tab., 9 x 6 in., cloth. \$5.00.

This technical account of track construction and maintenance of way gives the general principles and underlying purposes. It also gives many details about the equipment, material, appliances, and methods used by individual railroads under various conditions of traffic and climate. Bridge, signal, telegraph, and emergency work are included. This edition has been entirely rewritten.

Die Technische Mechanik; Vol. 2; Festigkeitslehre. By M. Samter. Charlottenburg, Robert Kiepert, 1925. 166 pp., 9 x 6 in., paper. 6,20 mk.

This concise presentation of the strength of materials is of practical importance to structural and mechanical engineers. About one-third of the book is devoted to theory, the remaining space being used for a collection of carefully selected examples illustrating the practical use of the theory.

* The statements made in these notices are taken from the books themselves, and this Society is not responsible for them. Unless otherwise specified, the books in this list have been donated by publishers.

Use of Water in Irrigation. By Samuel Fortier. (Agricultural Eng. Series.) Third Edition. N. Y., McGraw-Hill Book Co., 1926. 420 pp., illus., 8 x 6 in., cloth. \$3.00.

This book is confined almost exclusively to the irrigated farm and the problems that confront the irrigator, including the selection of farms, irrigating equipment, preparation of the land, application and measurement of water, irrigation of staple crops, and irrigation in foreign countries.

Water Purification Plants and Their Operation. By Milton F. Stein. Third Edition. N. Y., John Wiley & Sons, 1926. 316 pp., illus., diagrams, tab., 9 x 6 in., cloth. \$3.00.

Beginning with an account of the natural chemistry of water, the author describes the various types of purification plants, the physical, chemical, and bacteriological tests and their interpretation, the methods of coagulation, sterilization, softening, sedimentation, and filtration. In this edition, appendixes are added dealing with the interpretation of bacteriological tests, the colloidal theory in water purification, and hydrogen-ion concentration.

Additions to the Reading Room

Aircraft Instruments. By Herbert N. Eaton and others. N. Y., The Ronald Press Company, 1926. 269 pp., illus., 8½ x 5½ in., cloth.

The authors have attempted to describe clearly the various aircraft instruments in general use, of both American and European manufacture, to explain the operating principle of each class, and to discuss the errors to which each class of instrument is subject. The arrangement of subject-matter well adapts the volume for use as a reference handbook.

Work and Play: The Ancestry and Experience of Richard Justin McCarty. By Richard Justin McCarty, M. Am. Soc. C. E. 253 pp., 8 x 5 in., cloth. Kansas City, Mo., The Author, 1925.

This book is an interesting account of the life and work of Mr. McCarty and was written in response to requests from members of his family and friends whose interest induced its publication.

Handbook of Safety and Accident Prevention. By Fred G. Lange, N. Y. Engineering Magazine Co. 1926. 212 pp., illus., graphs, 9 x 6 in., cloth. \$2.00.

This handbook gives a general view of the whole field of safety work, describes procedures in installing programs for accident prevention and provides references to the literature.

Railway Track and Maintenance. By E. E. Russell, Engineer. Fourth Edition of "Railway Track and Track Work." N. Y., McGraw-Hill Book Co., 1926. 400 pp., illus., tab., 9 x 6 in., cloth. \$3.00.

This technical account of track construction and maintenance of way gives the general principles and underlying reasons. It also gives many details about the equipment, materials, appliances, and methods used by individual roadways under various conditions of traffic and climate. Tables, graphs, and diagrams are included. This edition has been entirely rewritten.

Die Technische Mechanik; Vol. 2: Festigkeitslehre. By M. Bamber. Charlottenburg, Robert Richter, 1925. 166 pp., 9 x 6 in., paper. \$2.50.

This concise presentation of the strength of materials is of particular importance to structural and mechanical engineers. About one-third of the book is devoted to theory, the remaining space being used for a collection of carefully selected examples illustrating the practical use of the theory.

* The statements made in these notices are taken from the books themselves, and this Society is not responsible for them. Further inquiries respecting the books in this list have been forwarded by publishers.

Current Civil Engineering Literature

Key to Abbreviated References to Publications Indexed*

Abbreviated References.	Publication.	Place.
Am. C. Inst.....	American Concrete Institute, <i>Proceedings</i> (Y.)	Detroit
A. I. E. E.....	American Institute of Electrical Engineers, <i>Journal</i> (M.)	New York
A. R. E. A.....	American Railway Engineering Association, <i>Proceedings</i> (Y.)	Chicago
A. S. T. M.....	American Society for Testing Materials, <i>Proceedings</i> (Y.)	Philadelphia
Am. Soc. C. E.....	American Society of Civil Engineers, <i>Proceedings</i> (M.)	New York
Am. Soc. Mun. Impvt.....	American Society for Municipal Improvements, <i>Proceedings</i> (Y.)	New York
Am. W. W. Assoc.....	American Water Works Association, <i>Journal</i> (Bi-M.)	Baltimore
Am. Wood Pres. Assoc.....	American Wood Preservers Association, <i>Proceedings</i> (Y.)	Chicago
Ann. P. et C.....	Annales des Ponts et Chaussées (Bi-M.)	Paris
Ann. T. P. Belg.....	Annales des Travaux Publics de Belgique (Bi-M.)	Brussels
Assoc. Ing. Gand.....	Annales de l'Association des Ingénieurs sortis des Ecoles Spéciales de Gand (Q.)	Ghent
Bost. Soc. C. E.....	Boston Society of Civil Engineers, <i>Journal</i> (M.)	Boston
Can. Engr.....	Canadian Engineer (W.)	Toronto
Cornell C. E.....	Cornell Civil Engineer (M.)	Ithaca
Dock & Harbour.....	Dock and Harbour Authority (M.)	London
Eng.....	Engineering (W.)	London
Eng. & Contr.....	Engineering and Contracting (W.)	Chicago
Eng. Inst. Can.....	Engineering Institute of Canada, <i>Journal</i> (M.)	Montreal
Eng. N. R.....	Engineering News-Record (W.)	New York
Engrs. Soc. W. Pa.....	Engineers' Society of Western Pennsylvania, <i>Journal</i> (M.)	Pittsburgh
Engr.....	Engineer (W.)	London
Engrs. & Eng.....	Engineers and Engineering, <i>Engineers' Club of Philadelphia</i> (M.)	Philadelphia
Gen. Civ.....	Le Génie Civil (W.)	Paris
Gesund. Ing.....	Gesundheits Ingenieur (W.)	Munich
Inst. C. E.....	Institution of Civil Engineers <i>Minutes of Proceedings</i> (Q.)	London
Inst. Mun. & Co. Engrs.....	Institution of Municipal and County Engineers, <i>Journal</i> (W.)	London
Int. Ry. Cong. Assoc.....	International Railway Congress Association, <i>Bulletin</i> (M.)	Brussels
Land. Arch.....	Landscape Architecture (M.)	Harrisburg
Mech. Eng.....	Mechanical Engineering (M.) <i>Journal of the American Society of Mechanical Engineers</i>	New York
Mil. Engr.....	Military Engineer (M.)	Washington
Min. & Metal.....	Mining and Metallurgy (M.) <i>American Institute of Mining Engineers</i>	New York
Mun. & Co. Eng.....	Municipal and County Engineering (M.)	Indianapolis
N. E. W. W. Assoc.....	New England Water Works Association, <i>Journal</i> (M.)	Boston
N. Y. R. R. Club.....	New York Railroad Club, <i>Proceedings</i> (M.)	Brooklyn
Oest. Ing. Arch. Ver.....	Oesterreichischer Ingenieur und Architekten Verein, <i>Zeitschrift</i> (F.)	Vienna
Power.....	Power (W.)	New York
Rev. Gen.....	Revue Générale des Chemins de Fer (M.)	Paris
Ry. Age.....	Railway Age (W.)	New York
Ry. Eng. & Main.....	Railway Engineering and Maintenance (M.)	Chicago
Ry. Rev.....	Railway Review (W.)	Chicago
Schw. Bauz.....	Schweizerische Bauzeitung (W.)	Zurich
Sci. Am.....	Scientific American (M.)	New York
Soc. Ing. Civ. Fr.....	Société des Ingénieurs Civils de France, <i>Mémoires et Comptes Rendus</i> (Q.)	Paris
Ver. deu. Ing.....	Verein deutscher Ingenieure, <i>Zeitschrift</i> (W.)	Berlin
West. Ry. Club.....	Western Railway Club, <i>Proceedings</i> (M.)	Chicago
West. Soc. Engrs.....	Western Society of Engineers, <i>Journal</i> (M.)	Chicago
Zeit. Bau.....	Zeitschrift für Bauwesen (Q.)	Berlin
Z. d. Bauer.....	Zentralblatt der Bauverwaltung (W.)	Berlin

* Y = Yearly; Q = Quarterly; M = Monthly; F = Fortnightly; W = Weekly.

A. Applied Sciences

a. Processes of Calculation

2. Graphical and Nomographical Processes

Moments in Restrained and Continuous Beams by the Method of Conjugate Points.* Discussion: W. M. Wilson, S. M. Cotten and A. T. Granger. Am. Soc. C. E. Mar., '26.

3. Stresses and Strains

Stresses in a Composite Member Subjected to Bending and Direct Stress.* B. A. Rich and W. W. Bigelow. Bost. Soc. C. E. Feb., '26.

Notes on Shear in Compression Members. Discussion: C. A. P. Turner and E. G. Walker. Am. Soc. C. E. Mar., '26.

The Softening of Strain-Hardened Metals and Its Relation to Creep.* R. W. Bailey. (Paper read before Inst. of Metals.) Eng. Mar. 12, '26.

B. Applied Mechanics

a. Mechanics of Solids (Strength of Materials)

2. Elastic Solids

Der Begriff der Knickgrenze.* (The Conception of the Compression Breaking Limit.) H. Zimmermann. Ver. deu. Ing. Feb. 13, '26.

6. Heterogeneous Solids (Reinforced Materials)

Die Berechnung der Schubbewehrung von Eisenbetonbalken nach den Vorschriften von 1907, von 1916 und von 1925.* (Calculation of the Protection against Shearing of Reinforced Concrete Beams According to the Regulations of 1907, of 1916 and of 1925). Luz. David and H. Perl. Z. d. Bauver. Jan. 20, '26.

b. Hydraulics

1. Processes of Measurement

The Elementary Hydraulic Phenomena of Movable Weirs.* A. G. M. Michell. Eng. Feb. 12, '26.

3. Industrial Hydraulics

Changing 10 000-Hp. Turbine Setting for Installing 16 000-Hp. Unit.* Paul F. Kruse. Power Mar. 9, '26.

Efficiency Tests of Hydraulic Turbines.* N. R. Gibson. Mil. Engr. Mar.-Apr., '26.

4. Dams

High Overflow Dam Main Unit of Baker Power Plant.* Eng. N. R. Mar. 4, '26.

Les Travaux du Barrage-Reservoir du Chavanon (Puy-de-Dôme). Transporteur à Câbles Ceretti et Tanfani.* (Construction of the Chavanon (Puy-de-Dôme) Reservoir Dam. Ceretti and Tanfani Cable Conveyor). Gen. Civ. Feb. 20, '26.

c. Pneumatics

2. Physical Pneumatics

Air Treatment in Heating and Ventilation.* Eng. & Contr. Feb. 24, '26.

C. Materials of Construction and General Processes

a. Lime, Cement, Mortar, Concrete, Brick, Bitumin, Timber, etc.

Differentiation of the Action of Acids, Alkali Waters and Frost on Normal Portland Cement Concrete.* C. J. Mackenzie and T. T. Thorvaldson. Eng. Inst. Can. Feb., '26.

Timber Resources of British Guiana.* Lloyd T. Emory. Engrs. & Eng. Feb., '26.

Some Effects of "Cal" on Cement and Concrete.* Miles N. Clair. Bost. Soc. C. E. Feb., '26.

Tests of Lumnite Cement and Concrete.* H. H. Scofield and C. A. Wright. Cornell C. E. Feb., '26.

Adhesion in Reinforced Concrete. Eng. Feb. 26, '26.

Report of the Committee on Masonry. (A. R. E. A.) Ry. Age Mar. 11, '26.

How to Prevent and to Restore Frozen Concrete.* A. M. Bouillon. Eng. N. R. Mar. 11, '26.

Studies of Curing Concrete in a Semi-Arid Climate.* C. L. McKesson. Eng. N. R. Mar. 18, '26.

Der Verschleissfestigkeit von Beton.* (Resistance of Concrete to Wear.) Z. d. Bauver. Feb. 3, '26.

c. Preservation and Use of Materials, Painting, Waterproofing

Report of the Committee on Wood Preservation. (A. R. E. A.) Mar. 12, '26.

f. Rock Excavation, Mining, Rock Removal

Abstracts of Institute Papers. Min. & Metal. Mar., '26.

g. Execution of Works, Specifications

2. Of Concrete

Precast Concrete Arches Carry Trolley Wires.* Eng. N. R. Feb. 25, '26.

4. Of Metal

Final Report of the Special Committee on Stresses in Structural Steel. Am. Soc. C. E. Mar., '26.

Welded Swimming-Pool Tank in a Chicago Club Building.* Eng. N. R. Mar. 4, '26.

Batten-Plate Columns: Their Status and a Design Theory.* R. Fleming and W. H. Welskopf. Eng. N. R. Mar. 11, '26.

5. Of Reinforced Concrete

Bond and Anchorage in Reinforced Concrete Beams.* T. D. Mylrea. West. Soc. Engrs. Jan., '26.

La "Pathologie" du Béton Armé.* (The "Pathology" of Reinforced Concrete.) Henry Lossier. Gen. Civ. Serial beginning Feb. 6, '26.

h. Foundations, Bridge Piers and Abutments

The Shoring and Underpinning for a Dangerous Building.* D. S. McIlroy. (From Construction.) Eng. & Contr. Feb. 24, '26.

Diving Through Mud to Rock.* Frank W. Skinner. Sci. Am. Apr., '26.

Recent Rock Tunneling Methods, Illinois Central R. R.* Eng. N. R. Mar. 4, '26.

Use Novel Methods in Building Bridge Substructure.* Ry. Age Mar. 13, '26.

i. Piles and Pile-Driving

The Vibro Concrete-Piling System. Eng. Feb. 26, '26.

k. Tunnels and Tunneling-Shield

The Six-Mile Moffat Tunnel.* George F. Paul. Sci. Am. Apr., '26.

l. Construction Machinery and Tools, Drainage

The Topsis Level-Luffing Crane.* Eng. Feb. 12, '26.

Traveler Erects Heavy Trusses for Theatre Roof.* Eng. N. R. Mar. 18, '26.

Betonmischer.* (Concrete Mixer.) H. Weihe. Z. d. Bauver. Feb. 3, '26.

D. Highways**a. Location**

Alignment and Grade as Affecting Highway Location. Harry L. Brightman. (Paper read before Univ. of Michigan.) Mun. & Co. Eng. Feb., '26.

Highway Location in the Middle West. Ralph E. Benedict. Mun. & Co. Eng. Feb., '26.

c. Construction

Stone Road Construction. E. D. Nesbitt. (Paper read before Purdue Univ.) Mun. & Co. Eng. Feb., '26.

Paving for Car Track Paving. J. W. Howard. (Paper read before N. J. State League of Municipalities.) Mun. & Co. Eng. Feb., '26.

Test Road in St. Joseph County, Indiana. A. C. Mangus. (Paper read before Purdue Univ.) Mun. & Co. Eng. Feb., '26.

Patching and Resurfacing Pavements at Richmond, Ind. D. B. Davis. (Paper read before Purdue Univ.) Mun. & Co. Eng. Feb., '26.

Resume of Annual Meeting of Highway Research Board. Mun. & Co. Eng. Feb., '26.

The Varied Uses of Asphalt in State Highway Work. B. E. Gray. (Paper read before Fourth Asphalt Conference.) Engrs. & Eng. Feb., '26.

Road Construction in Huddersfield.* W. Jagger. Inst. Mun. & Co. Engrs. Feb. 16, '26.

The Use of Tar in the Construction of Roadways. Thomas Glover and Arthur E. Collins. Inst. Mun. & Co. Engrs. Feb. 16, '26.

The Hexagonal Slab Design of Concrete Pavement. S. Herbert Hare and Jacob Feld. Am. Soc. C. E. Mar., '26.

Roadway Paving Policy and Maintenance for Modern Traffic Conditions.* Osmond Cattlin. Inst. Mun. & Co. Engrs. Mar. 2, '26.

Drains and Water Courses Along Roads. W. G. McGeorge. (Paper read before Conference on Road Constr., Toronto.) Can. Engr. Mar. 2, '26.

Building An Eight-Lane Paved Highway.* Eng. N. R. Mar. 4, '26.

Concrete in Modern Road Construction. H. V. Overfield. Inst. Mun. & Co. Engrs. Mar. 16, '26.

Records on a Concrete Road Using Weighed Aggregates.* W. E. Barker. Eng. N. R. Mar. 18, '26.

Paving the Champ De-Mars, Montreal, Que.* Louis Barbl. Can. Engr. Mar. 16, '26.

d. Maintenance

The Maintenance of Gravel Streets at Martinsville, Ind. E. D. Canatsey. (Paper read before Purdue Univ.) Mun. & Co. Eng. Feb., '26.

Repair Methods for Concrete Roads.* A. H. Hinkle. (Paper read before Miss. Valley Highway Depts.) Mun. & Co. Eng. Feb., '26.

Michigan Road Maintenance Methods. B. C. Tiney. (Paper read before Purdue Univ.) Mun. & Co. Eng. Feb., '26.

Salvaging Old Macadam Roads. G. F. Schlesinger. (Paper read before Univ. of Michigan.) Mun. & Co. Eng. Feb., '26.

Maintenance of Concrete Roads. W. D. Colby. (Paper read before Conference on Road Constr., Toronto.) Can. Engr. Mar. 2, '26.

Bituminous Road Maintenance. Alan K. Hay. (Paper read before Conference on Road Constr.) Can. Engr. Mar. 16, '26.

Factors in Maintenance of Earth Roads. D. J. Kean. (Paper read before Conference on Road Construction.) Can. Engr. Mar. 16, '26.

Comparison of Brick and Asphalt Pavement Repair Costs.* R. H. Simpson. Eng. N. R. Mar. 25, '26.

g. Masonry and Tools

The Selection and Use of Highway Maintenance Equipment. H. J. Kirk. (Paper read before Purdue Univ.) Mun. & Co. Eng. Feb., '26.

h. Vehicles, Automobiles, Traffic

- Influence of Traffic on Road Surface.* E. A. James. Can. Engr. Mar. 2, '26.
 Strong County Road Organizations. E. L. Miles. (Paper read before Ontario Good Roads Assoc.) Can. Engr. Mar. 2, '26.
 Traffic Obstacles. Howard Olsen. (Paper read before Purdue Univ.) Mun. & Co. Eng. Feb., '26.
 Influence of the Modern Highway.* W. A. McLean. Eng. Inst. Can. Feb., '26.

x. Miscellaneous

- Highways Cost Keeping and Accounting. W. H. Brown. (Paper read before Ontario Good Roads Assoc.) Can. Engr. Mar. 2, '26.

E. Bridges, Viaducts, Arches**a. Timber Bridges and Viaducts**

- Report on Wooden Bridges and Trestles.* (A. R. E. A.) Ry. Age Mar. 12, '26.

b. Iron and Steel Bridges and Viaducts

- Longest Ballasted-Deck Plate-Girder Bridge: E. J. & E. Ry.* Eng. N. R. Feb. 25, '26.
 Report on Iron and Steel Structures. (A. R. E. A.) Ry. Age Mar. 10, '26.
 Large Cantilever Planned for Mount Hope Toll Bridge.* Eng. N. R. Mar. 18, '26.
 Heavy Steelwork in Long-Girder Bridge with Two Twin Lift Spans.* Eng. N. R. Mar. 25, '26.
 Rotbachbrücke bei Teufen, Appenzell A.-Rh.* (Rotbach Bridge near Teufen, Appenzell on the Rhine.) L. Bendel. Schw. Bauz. Feb. 13, '26.

d. Concrete and Reinforced Concrete Bridges and Viaducts

- Reduction of Flexural Stresses in Fixed Concrete Arches.* J. F. Brett. Eng. Inst. Can. Feb., '26.
 Concrete Arch Bridge at Donner Summit, Calif.* Eng. N. R. Mar. 4, '26.
 Ein französische Dreigelenkbogenbrücke aus Eisenbeton und Stahl.* (The French Three-Hinged Arch Bridge of Reinforced Concrete and Steel.) Eger. Z. d. Bauver. Jan. 27, '26.

g. Swing, Bascule, Lift, Floating, Oscillating Bridges, Travelling Cranes

- Krane mit eigener Kraftquelle.* (Cranes with Individual Sources of Power.) Fritz Woeste. Ver. deu. Ing. Feb. 27, '26.

h. Computations, Tests, etc.

- Final Report of the Special Committee on Impact in Highway Bridges.* Am. Soc. C. E. Mar., '26.
 Beam and Slab Concrete Highway Bridges to Carry Ministry of Transport Loading.* E. Owen Williams. Inst. Mun. & Co. Engrs. Mar. 16, '26.

F. Inland Waters, Waterways**c. Regulation of Waterways—Volume of Discharge, Freshets, Floods, Soundings**

- Chain of Lakes to Solve Southwest Flood Problem. E. R. Stapley. Cornell C. E. Feb., '26.
 The Subjugation of the Colorado.* Guy Elliot Mitchell. Sci. Am. Mar., '26.
 Relation of Depth to Curvature of Channels. Discussion: E. J. Walker and Hubert Engels. Am. Soc. C. E. Mar., '26.
 Flood Control in the Southwest and Elsewhere. (From paper read before Nat'l Drainage Congress.) Eng. N. R. Mar. 11, '26.
 La Protection de Paris contre les Inondations par une Dérivation des Eaux de la Marne entre Neuilly-sur-Marne et Saint-Denis.* (Protection of Paris against Floods by a Diversion of the Waters of the Marne between Neuilly-sur-Marne and Saint Denis.) E. Maynard. Gen. Civ. Feb. 13, '26.

d. Diverting Dams, Locks, Lifts, Elevators, Inclined Planes

- Sennar Dam on the Blue Nile in Egypt Completed.* Eng. N. R. Feb. 25, '26.
 Blasting a 200 Ft. Diversion Canal.* E. Godfrey. Eng. & Contr. Mar. 17, '26.

f. Supply, Sources of Water, Drains and Reservoirs

- Analysis of Plan to Form Sixth Great Lake in Canada.* Eng. N. R. Mar. 4, '26.
 The Flow of Water Through Soil.* Engr. Mar. 19, '26.

G. Maritime Works**b. Management and Protection of Coasts, Beaches, Dunes**

- Seawall Construction on Gulf of Mexico.* Marshall Howard. Eng. & Contr. Mar. 17, '26.

c. Vessels and Maritime Navigation, Lighthouses, Buoys, Various Signals

- Electric Propulsion of Ships.* Eskil Berg. (Inst. Engrs. & Shipbuilders.) Eng. Feb. 26, '26.

e. Navigation Locks

- Les Travaux d'Extension du Port d'Anvers. La Grande Écluse Maritime du Kruisschans.* (Extension Works of the Port of Antwerp. The Great Sea Lock at Kruisschans.) L. Bonnet. Gen. Civ. Feb. 6, '26.

f. Maritime Rivers and Canals, Bank Protection

Problems at Mouth of the Mississippi.* Curtis McD. Townsend. *Mil Engr.* Mar.-Apr., '26.

g. Dredges and Dredging, Force Pumps, Refloating and Removing Wrecks, Ice-Breakers

Karge Diesel Electric Dredge Built for Portland.* *Eng. N. R.* Mar. 25, '26.

i. Harbors (General Articles)

Inbetriebnahme der neuen Hafenanlagen in Wesermünde.* (Putting in Operation the New Harbor Works at the Mouth of the Weser.) *Z. d. Bauver.* Feb. 10, '26.

j. Dockyard Machinery and Shipyards, Dry Docks

Pressure Distribution on Quadruple Launching Ways.* J. A. Davis. *Eng. Mar.* 19, '26.
Die Verwendung der alten Holtenauer Südschleuse als Trockendock.* (Use of the Old Holtenau South Lock as a Drydock.) *Hayssen. Z. d. Bauver.* Feb. 10, '26.

H. Railroads. Street and Interurban Railways. Automobiles. Aeronautics

a. Railroads

1. General Articles

An Account of the Construction of the Kassala Railway, Sudan.* *Int. Ry. Cong. Assoc.* Feb., '26.

Railway Construction: Recent and Prospective.* *Eng. N. R.* Feb. 25, '26.

How We Are Cutting Our Maintenance of Way and Structures Payroll \$50 000 000 a Year.*

C. C. Cook. *Ry. Eng. & Main.* Mar., '26.

Our Alaska Railroad.* Noel W. Smith. *Sci. Am.* Mar., '26.

2. Location

Report on Economics of Railway Location. (A. R. E. A.) *Ry. Age* Mar. 10, '26.

A Unique Line Relocation Problem.* *Ry. Age* Mar. 30, '26.

3. Roadbed (Grading Construction Work)

Jacking Culvert Through Embankment Cuts Cost Two-Thirds.* W. C. Swartout. *Ry. Eng. & Main.* Mar., '26.

Report of Committee on Ballast. (A. R. E. A.) *Ry. Age* Mar. 10, '26.

Report on Signs, Fences and Crossings.* (A. R. E. A.) *Ry. Age* Mar. 11, '26.

Report of the Committee on Roadway.* (A. R. E. A.) *Ry. Age* Mar. 12, '26.

4. Track

Rail Creep.* E. Gulraud. (From *Les Chemins de Fer et les Tramways.*) *Int. Ry. Cong. Assoc.* Feb., '26.

New Crossting Plant for Southern Pacific at Oakland.* *Eng. N. R.* Feb. 25, '26.

Right of Way is Developed Intensively.* C. H. Mottier. *Ry. Rev.* Mar. 6, '26.

Changing Track Levels Under Pressure.* W. G. Arn. *Ry. Rev.* Mar. 6, '26.

Plate Fulcrum Scale Speeds Switching.* L. R. Boyer. *Ry. Rev.* Mar. 6, '26.

Crossings at Grade Were Eliminated.* L. L. Lyford. *Ry. Rev.* Mar. 6, '26.

Illinois Central Installs G. R. S. Electric Car Retarders.* *Ry. Age* Mar. 6, '26.

Report of the Committee on Rail.* (A. R. E. A.) *Ry. Age* Mar. 11, '26.

Progress Report on Stresses in Railroad Track. (A. R. E. A.) *Ry. Age* Mar. 11, '26.

Report of Committee on Track.* (A. R. E. A.) *Ry. Age* Mar. 11, '26.

Report of Committee on Ties.* (A. R. E. A.) *Ry. Age* Mar. 12, '26.

Increased Facilities Serve Double Track.* F. P. Turner. *Ry. Rev.* Mar. 20, '26.

Melting Snow on Terminal Tracks of Illinois Central R. R.* *Eng. N. R.* Mar. 25, '26.

Ueber die Sicherung von Schraubenmuttern, insbesondere bei Eisenbahnlaschen.* (On Lock Nuts, Especially upon Railroad Fish-Plates.) Saller. *Z. d. Bauver.* Jan. 27, '26.

5. Signals and Safety Apparatus

Results Obtained with the Track Brake. "Thyssenhutte System". W. Simon-Thomas. *Int. Ry. Cong. Assoc.* Jan., '26.

The Development of Car Retarders.* (Railway Signaling.) *Int. Ry. Cong. Assoc.* Jan., '26.

Re-Signalling of the Mersey Railway.* (From *Modern Transport.*) *Int. Ry. Cong. Assoc.* Feb., '26.

G. H. & S. A. Uses National System of Automatic Train Stop.* *Ry. Age* Feb. 27, '26.

Speed of Cars Is Controlled at Hump.* *Ry. Rev.* Mar. 6, '26.

Signals Were Changed by Electrification. (Illinois Central.) H. G. Morgan. *Ry. Rev.* Mar. 6, '26.

Operation of Trains by Signal Indication. T. W. Cheatham. (Paper read before A. R. E. A.) *Ry. Age* Mar. 9, '26.

Report of Committee X—Signaling Practice. (A. R. E. A.) *Ry. Age* Mar. 9, '26.

Report of Committee I—Economics of Signaling.* (A. R. E. A.) *Ry. Age* Mar. 9, '26.

Report of Committee II—Mechanical Interlocking. (A. R. E. A.) *Ry. Age* Mar. 9, '26.

The Uses of Electro-Mechanical Interlocking. P. A. Rainey. (Paper read before A. R. E. A.) *Ry. Age* Mar. 9, '26.

Report of Committee III—on Signals—Power Interlocking. (A. R. E. A.) *Ry. Age* Mar. 10, '26.

Report of Committee V on Signals—Instructions. (A. R. E. A.) *Ry. Age* Mar. 10, '26.

Report of Committee XI on Signals—Chemicals. (A. R. E. A.) *Ry. Age* Mar. 10, '26.

Report of Committee IV on Signals—D. C. Signaling. (A. R. E. A.) *Mar.* 10, '26.

Report of Committee VI on Signals—Designs. (A. R. E. A.) *Ry. Age* Mar. 10, '26.

Report of Committee VIII—A. C. Signaling. (A. R. E. A.) *Ry. Age* Mar. 10, '26.

Report of Committee on Signals and Interlocking. (A. R. E. A.) *Ry. Age* Mar. 11, '26.

6. Rolling Stock, Fuel

Canadian National Diesel-Electric Cars.* (From *Ry. Mechanical Engineer.*) *Int. Ry. Cong. Assoc.* Feb., '26.

Diesel-Electric Develops Great Power.* *Ry. Rev.* Feb., '26.

The Motor Comes to the Fore.* A. H. Candee. (Paper read before Iowa Eng. Soc.) *Ry. Rev.* Feb. 20, '26.

- Electric Locomotive Classification.* David C. Hershberger. Ry. Age Feb. 27, '26.
 Dynamometer and Track Inspection Car.* Leo Matthews. Ry. Rev. Feb. 27, '26.
 McClellon Water-Tube Boiler Tests.* Ry. Age Mar. 6, '26.
 Unit Cars and Electric Locomotives.* H. A. Woolen. Ry. Rev. Mar. 6, '26.
 Report of the Committee on Water Service. (A. R. E. A.) Ry. Age Mar. 10, '26.
 The Diesel-Electric Locomotive.* (From paper read before N. Y. Sections of the Four
 Founder Engineering Societies.) Ry. Age Mar. 13, '26.
 Unique Observation-Club Cars for the Northern Pacific.* Ry. Age Mar. 13, '26.
 Large Gas-Electric Car for the Boston & Maine.* T. H. Murphy. Ry. Age Mar. 27, '26.
 Die Normalisierung des Antriebsmechanismus elektrischer Schnellzuglokomotiven der S. B. B.
 (Standardization of the Driving Mechanism of the Electric Express Locomotives of the
 Swiss Government Railways). W. Kummer. Schw. Bauz. Feb. 6, '26.
 Die Achsdruckverteilung elektrischer Lokomotiven unter dem Einfluss der auf den Rahmen
 wirkenden Kräfte, mit besondere Berücksichtigung des "Tram"-Antriebes.* (The Dis-
 tribution of Axle Pressures in the Electric Locomotive under the Influence of the Forces
 Acting on the Frame, with Special Regard to the "Tram" Drive.) A. Laternser. Schw.
 Bauz. Feb. 20, '26.
7. Use of Electricity
 Main Line Railway Electrification.* Philip Dawson and S. Parker Smith. Engr. Feb. 12, '26.
 Chicago Terminal Electrification on the Illinois Central.* D. J. Brumley. Eng. N. R.
 Feb. 25, '26.
 Electrification of a Section of the Orleans Railway.* H. Parodi. (Paper read before Inst.
 Elec. Engrs. and French Soc. of C. E.) Eng. Serial beginning Feb. 26, '26.
 Catenary System Carries Needed Current.* J. S. Thorp. Ry. Rev. Mar. 6, '26.
 Report of Committee on Electricity. (A. R. E. A.) Ry. Age Mar. 10, '26.
8. Stations, Terminals, Engine Houses, Shops
 Arrangement of Railway Lines in the Form of a Star for Turning Locomotives.* (From
Revista Technica delle Ferrovie Italiane.) Int. Ry. Cong. Assoc. Feb., '26.
 How Selkirk Yard is Lighted.* W. C. Gilman and W. J. Hedley. Ry. Rev. Feb. 20, '26.
 Correlating Expenses and Output.* J. W. Kennedy. Ry. Rev. Feb. 20, '26.
 Chicago Terminal Electrification on the Illinois Central.* D. J. Brumley. Eng. N. R.
 Feb. 25, '26.
 I. C. Chicago Terminal Project Now One-Third Completed.* Ry. Age Feb. 27, '26.
 Unification of Railway Terminals. E. E. R. Tratman. Eng. N. R. Mar. 4, '26.
 Right of Way is Developed Intensively.* C. H. Mottler. Ry. Rev. Mar. 6, '26.
 I. C. Builds New Freight Car Repair Yard.* W. W. Baxter. Ry. Rev. Mar. 6, '26.
 Subway Accommodates Suburban Patrons.* C. F. Fauntz. Ry. Rev. Mar. 6, '26.
 New Engine Terminal for Illinois Central.* W. W. Baxter. Ry. Rev. Mar. 6, '26.
 South Chicago Trains Will Use Subway.* (Illinois Central.) M. D. Thompson. Ry. Rev.
 Mar. 6, '26.
 Report on Shops and Terminals. (A. R. E. A.) Ry. Age Mar. 10, '26.
 Report of Committee on Yards and Terminals. (A. R. E. A.) Ry. Age Mar. 11, '26.
 Report of the Committee on Buildings. (A. R. E. A.) Ry. Age Mar. 12, '26.
 Freight Terminal Cost Equals 75 Mile Hawk. Ry. Rev. Mar. 20, '26.
 Eight-Wheel Switchers for the T. & P.* Ry. Age Mar. 27, '26.
 Mobile & Ohio Builds Large Shop in Record Time.* B. A. Wood. Ry. Age Mar. 27, '26.
9. Technical and Commercial Use
 Sharp Competition Aroused by Oil Traffic.* Ry. Age Mar. 20, '26.
 Lehigh Valley Substitutes Trucks for Trains and Switching.* Ry. Age Feb. 27, '26.
 Chicago & Alton to Operate Buses.* Ry. Age Feb. 27, '26.
 S. P. & S. Operates Fleet of 30 Motor Buses.* Ry. Age Feb. 27, '26.
 What Does it Cost to Operate Buses and Truck? Ry. Age Mar. 27, '26.

c. Automobiles

- 2. Internal Combustion Engines Automobiles**
 Electric Transmission for Internal-Combustion Engines.* Hermann Lemp. Mech. Eng.
 Mar., '26.
x. Miscellaneous
 Lehren des amerikanischen und europäischen Automobilbaues.* (Lessons of American and
 European Automobile Building.) G. Becker. Ver. deu. Ing. Serial beginning Feb. 20, '26.

I. Municipal Water-Works. Agricultural Engineering, Irrigation

a. General Articles

- The Water Supply of the Border Cities.* William Gore and J. Clark Keith. Eng. Inst.
 Can. Feb., '26.
 The Sanitary Conservation and Utilization of Water Resources. W. L. Stevenson. Bost. Soc.
 C. E. Feb., '26.
 St. Catharines Water System. Can. Engr. Feb. 23, '26.
 Waterworks Plant, Port Colborne, Ont.* E. H. Darling. Can. Engr. Feb. 23, '26.
 Additional Water Supply Under Way for Kansas City, Mo.* Eng. N. R. Mar. 25, '26.

c. Dams and Reservoirs

- Construction of Concrete Dam at Savenay.* William Stokes Sheets. Mil. Engr. Mar.-Apr., '26.
 Multiple-Arch at Gem Lake on Rush Creek, California. Discussion: F. W. Scheldenhelm,
 Charles W. Comstock, and George W. Howson. Am. Soc. C. E. Mar., '26.
 Eleven Dams Make Storage Reservoir at Lake Kenogami.* A. F. Dyer. Eng. N. R. Mar.
 11, '26.
 Reinforced Concrete Automatic Sector Regulators at Camarasa.* Eng. Mar. 12, '26.
 Progress on the Experimental Arch Dam. Eng. N. R. Mar. 25, '26.

d. Analysis and Purification of Water

- Filter Sand for Municipal Water Supply. W. M. Weigel. (From Report of Investigations by
 U. S. Bureau of Mines.) Can. Engr. Feb. 23, '26.

Operation of Waterworks, Filter Plants. August V. Graf. (Paper read before Missouri Conference on Water Purification.) Can. Engr. Feb. 23, '26.
Single Building Houses Bismark's New Pumps and Filters.* Thorn Dickinson. Eng. N. R. Mar. 4, '26.

c. Distribution of Water

New Aqueduct for the National Capital.* Phillip O. Macqueen. Mil. Engr. Mar.-Apr., '26.
The Improved Venturi Flume.* Discussion: Carl Rohwer. Am. Soc. C. E. Mar., '26.
Irrigation Developments Through Irrigation Districts.* E. Courtland Eaton and Frank Adams. Am. Soc. C. E. Mar., '26.
Land Settlement of Irrigation Projects. Augustus Griffin. Am. Soc. C. E. Mar., '26.
The Financing of Irrigation Developments by Private Capital. R. E. Shepherd. Am. Soc. C. E. Mar., '26.
History and Problems of Irrigation Development in the West. John A. Widtsoe. Am. Soc. C. E. Mar., '26.
Is It Desirable to Lay Water Mains in Alleys.* Eng. & Contr. Mar. 10, '26.
San Francisco Bay Crossing of Hetch Hetchy Aqueduct.* Eng. N. R. Mar. 18, '26.

f. Drainage of Land

Present Policy of the United States Bureau of Reclamation Regarding Land Settlement. Am. Soc. C. E. Mar., '26.
Filling the Submerged Lands.* L. O. Sloggett. Ry. Rev. Mar. 6, '26.
Technische Vorschriften für Bau und Betrieb von Grundstücksentwasserungsanlagen.* (Technical Instructions for the Construction and Operation of Land-Drainage Works.) Schubert. Gesund. Ing. Feb. 13, '26.

J. Sewerage, Sewage and Refuse Disposal

a. Sewers and Drains

Design of East York Sewers and Their Construction by Contract and Day Labour.* R. O. Wynne-Roberts and Grant R. Jack. Eng. Inst. Can. Feb., '26.
The Reinforced Concrete Arch in Sewer Construction: A Review of Past Practice in Design and An Account of Recent Studies in St. Louis, Missouri. Discussion. Mar., '26.
Heavy Sewer Construction Methods and Plant in Brooklyn.* Eng. N. R. Mar. 25, '26.

b. Sewage Disposal, Purification

Stream Pollution.* A Symposium. Discussion: Kenneth Allen. Am. Soc. C. E. Mar., '26.
Progress of the Sewage Disposal Program at Chicago.* Edward J. Kelly. Eng. N. R. Serial beginning Mar. 4, '26.
Some of the Tuning-Up Difficulties of the Milwaukee Sewage Plant.* Eng. N. R. Mar. 18, '26.
Elne Laboratoriums-Versuchsanlage für belebten Schlamm.* (A Laboratory Research Plant for Activated Sludge.) F. Sierp. Gesund. Ing. Jan. 23, '26.

K. Heat Engines

a. Steam Engines, Boilers

Waste-Heat Boilers in Steel Mills.* F. H. Willcox and J. C. Hayes. West. Soc. Engrs. Jan., '26.
Boiler Water Conditioning with Special Reference to High Operating Pressure and Corrosion.* R. E. Hall. Engrs. & Eng. Feb., '26.
New Boiler Equipment at the Interborough Rapid Transit Co.'s Fifty-Ninth Street Power Station.* H. B. Reynolds, J. M. Taggart and R. S. Lane. Mech. Eng. Mar., '26.

b. Steam Turbines

50 000-KW. Parsons Turbo-Alternator for Chicago.* Eng. Mar. 5, '26.

L. Electricity

b. Distribution and Transmission of Electricity

1. Power Plants
The Trend of Steam Power Plant Development.* A. G. Christie. Eng. Inst. Can. Feb., '26.
6. Safety of Electric Distribution Systems. Laws and Regulations
Generation of Explosive Gases in Electric Water Heaters and Boilers.* J. W. Shipley and A. Blackie. Eng. Inst. Can. Feb., '26.
Die Betriebssicherheit elektrischer Messgeräte.* (Operating Safety of Electric Measuring Appliances.) Georg Kleinath. Ver. deu. Ing. Feb. 6, '26.
x. Miscellaneous
European Engineering Practice in Production, Transmission and Use of Electrical Energy.* A. E. Davison. Eng. Inst. Can. Feb., '26.

d. Mechanical Uses of Electricity

2. Servomotors, Hoists, Elevators, Handling Machinery
Die elektromagnetische Kupplung von Forster.* (The Forster Electromagnetic Coupling.) O. Seeberger. Schw. Bauz. Feb. 13, '26.

f. Signals and Communication

Development and Application of Loading for Telephone Circuits.* Thomas Shaw and William Fondiller. A. I. E. E. Mar., '26.
Methods of High Quality Recording and Reproducing of Music and Speech Based on Telephone Research.* J. P. Maxfield and H. C. Harrison. A. I. E. E. Mar., '26.

La Traversée d'un Bras de Mer par une Ligne Electrique de 1900 Mètres de Portée, près de Tacoma (Washington, E.-U.)* (The Crossing on an Arm of the Ocean by a Cable of 1900 Meter Span near Tacoma, Washington, U. S. A.) P. Cautourier. Gen. Civ. Feb. 6, '26.
Les Compteurs Téléphoniques et leur Application au Service des Conversations Taxées.* (Telephone Meters and Their Use for Metered Conversation Service.) Lucien Fournier. Gen. Civ. Feb. 13, '26.

M. Architecture

b. Business and Commercial Buildings

Neubauten der Deutschen Reichsbank.* (New Building of the German Reichsbank.) Philipp Nitzte. Z. d. Bauver. Jan. 27, '26.
Housing and Maintenance. Edward S. Moule. Inst. Mun. & Co. Engrs. Feb. 16, '26.

c. Residences, Hotels

f. Factories and Mill Buildings

How to Figure the Capacity of Chimneys. J. G. Mingle. Power. Feb. 23, '26.

g. Other Buildings

The Designing and Planning of Stadiums.* Mary A. Rolfe. (From The Architectural Forum.) Eng. & Contr. Feb. 24, '26.
Die Alte Kapelle in Regensburg und die karolingische Pfalzanlage.* (The Old Chapel at Regensburg and the Plan of the Carolingian Palace.) Leonhardt. Zeit. Bau. Pt. 10, '25.

h. Fire Protection

Wharf Fire Loss Laid Largely to Lack of Cross Fire Walls.* Eng. N. R. Mar. 18, '26.

x. Miscellaneous

Building Against Earthquakes. Henry D. Dewell. (From Pacific Coast Architect.) Eng. & Contr. Feb. 24, '26.

O. Administration, Legislation, Economics, Statistics

b. Economic Questions of a General Character; Valuations, etc.

Trend of Construction Cost of Certain Public Utilities.* William Breuer. Am. Soc. C. E. Mar., '26.
Surety Bonding Practices Officially Censured. (From report of State Architect.) Eng. N. R. Mar. 18, '26.

d. Administrative and Financial Management of Means of Communication

2. Routes and Roads

Road Management and Classification. J. M. McVicar. (Paper read before Ontario Good Roads Assoc.) Can. Engr. Mar. 16, '26.

5. Railroads and Street Railways

Report of Committee VII—Contracts and Valuation.* (A. R. E. A.) Ry. Age Mar. 9, '26.
Report on Rules and Organization. (A. R. E. A.) Ry. Age Mar. 10, '26.
Report on Records and Accounts. (A. R. E. A.) Ry. Age Mar. 10, '26.
Report on Uniform General Contract Forms. (A. R. E. A.) Ry. Age Mar. 11, '26.
Report on Economics of Railway Operation.* (Paper read before A. R. E. A.) Ry. Age Mar. 12, '26.
Report on Economics of Railway Labor. (A. R. E. A.) Ry. Age Mar. 12, '26.
Purchasing Budgets Will Stabilize Business.* C. D. Young. (Abstract of paper read N. Y. R. R. Club.) Ry. Age Mar. 27, '26.

e. Legislation—Questions Concerning Wages and Working Conditions

Some Phases of Industrial Relations. Homer E. Niesz. Eng. Inst. Can. Feb., '26.

g. Engineering Education

Research and Its Application to Engineering. George A. Hoadley. Engrs. & Eng. Feb., '26.
Report on Co-Operative Relations with Universities. (A. R. E. A.) Ry. Age Mar. 11, '26.

Q. Surveying and Geodesy

The Brock Process of Making Topographic Surveys from the Air.* F. E. Weymouth. Eng. Feb. 19, '26.
A New Automatic Signal Lamp.* D. L. Parkhurst. Mil. Engr. Mar.-Apr., '26.
Aeroplane Topographic Surveys.* George T. Bergen. Am. Soc. C. E. Mar., '26.
No Mistake Made in These Surveys. (Illinois Central.) L. O. Sloggett. Ry. Rev. Mar. 6, '26.
Expression of Land Forms on Maps. A. C. T. Sheppard. (Papers read before Dominion Land Surveyors Assoc.) Can. Engr. Mar. 16, '26.

S. City Planning

Bebauungsplan, Baustufenplan und Flushtlinienplan im Städtebaugesetz.* (Building Plan, Zoning Plan and Facade Plan in the Municipal Building Law.) Gensel. Z. d. Bauver. Jan. 20, '26.

Employment Service

The Engineering Societies Employment Service is under the joint management of the National Societies of Civil, Mining, Mechanical, and Electrical Engineers. A Chicago office is maintained in co-operation with the Western Society of Engineers, and a San Francisco office, in co-operation with the Engineers' Club of San Francisco and the California Section of the American Chemical Society. The Service is available only to the several memberships and is maintained by contributions from the Societies and their individual members who are directly benefited.

Offices.—Eastern Office, 33 West 39th Street, New York, N. Y., Walter V. Brown, Manager; Chicago Office, 53 West Jackson Boulevard, Room 1736, Chicago, Ill., A. Krauser, Manager; and San Francisco Office, 57 Post Street, Room 715, San Francisco, Calif., Newton D. Cook, Manager.

Men Available.—Under this heading, brief announcements will be published without charge. These announcements will not be repeated, except on request received after an interval of one month. Names and records will remain in the active files of the Service for a period of three months, and are renewable on request. Notices for *Proceedings* should be addressed to Employment Service, 33 West 39th Street, New York, N. Y., and should be received prior to the first of the month.

Opportunities.—A Bulletin of engineering positions available is published weekly and may be obtained by members of the Societies concerned at a subscription rate of \$3 per quarter, or \$10 per annum, payable in advance. Positions which are not filled promptly as a result of publication in the Bulletin, may be announced herein.

Voluntary Contributions.—Members obtaining positions through the medium of this Service are invited to co-operate with the Societies in the financing of the work by nominal contributions made within thirty days after placement, on the basis of \$10 for all positions paying a salary of \$2 000 or less per annum; \$10 plus 1% of all amounts in excess of \$2 000 per annum; temporary positions (of one month or less), 3% of total salary received. The income contributed by the members, together with the finances appropriated by the four Societies named, will be sufficient, it is hoped, not only to maintain but to increase and extend the service.

Replies to Announcements.—Replies to announcements published herein, or in the Bulletin, should be addressed to the key number indicated in each case, with a two-cent stamp attached for re-forwarding, and forwarded to the Employment Service at the address given. Replies received by the Service after the positions to which they refer have been filled, will not be forwarded.

POSITIONS AVAILABLE

SALES ENGINEER, about 35, preferably acquainted with architects and contractors in New York City, to sell the services of

a construction company. Apply by letter. Location, New York. R-8713.

MEN AVAILABLE

INVESTIGATIONS AND REPORTS, by Member, Am. Soc. C. E., on any Florida engineering proposition involving municipal improvements, structural preliminaries for bridges, buildings, or drainage, undertaken for engineering firms having Florida business and requiring Florida supervision of works. Thirty years' experience in these branches. Correspondence solicited for further details. A-1602.

PROFESSOR OF ENGINEERING, Assoc. M. Am. Soc. C. E., who recently spent three years in the exclusive study of modern educational principles, as applied to technical fields, desires position in an Eastern university. Age 31; married; New York State License. Six years' teaching experience, transportation (railroad and highway), mechanics, and hydraulics. A-2043.

HYDRAULIC AND ELECTRICAL ENGINEER, M. Am. Soc. C. E.; Graduate Mechanical and Electrical Engineer. Twenty years' experience investigating, designing and construction of water powers, transmission lines, substations, operation, management of public utility. Desires position as designer, superintendent, chief engineer, or manager. Would also consider position as manager, or sales engineer. B-4760.

PROFESSOR OF CIVIL ENGINEERING, Assoc. M. Am. Soc. C. E.; licensed professional engineer. Twelve years' experience as structural engineer and five years' teaching experience. Interested in better position. B-7837.

PROFESSOR, Assoc. M. Am. Soc. C. E.; Licensed Engineer with C. E. and M. S. degrees. Seven years' engineering experience in highways and structures; eight years' experience teaching mechanics, highways, structures, surveying, and drawing. At present, with large university. B-9617.

GRADUATE CIVIL ENGINEER, M. Am. Soc. C. E.; licensed professional engineer and land surveyor, New Jersey; age 43; married. Twenty years' experience, surveys, investigations, reports, and construction of irrigation, power, real estate developments, and municipal work. Location immaterial. Available at once. C-404.

CONSTRUCTION ENGINEER, Assoc. M. Am. Soc. C. E.; Graduate civil engineer; age 32; married. Five years' experience in design and construction of concrete mill and machinery foundation and reinforced concrete sub-surface structures and foundations. Experienced in estimating and valuation, and in layout and management of construction plants. Four years army service. Available at once. Will go anywhere. Initial salary open. C-1105.

GRADUATE CIVIL ENGINEER, Assoc. M. Am. Soc. C. E. Fifteen years' varied experience, drainage, highways, highway bridges, streets, and pavements. Experience also includes municipal improvements and work connected with general practice; expert at land surveying and subdivision work. Accustomed to dealing directly with public. Widely experienced in supervising construction. Location preferred, Middle or Atlantic States. Salary, \$3 000-\$4 200 per year. C-1106.

CIVIL AND HYDRAULIC ENGINEER, M. Am. Soc. C. E.; age 44. Twelve years' experience, hydraulic, water power, and river discharge, including five years as assistant engineer and four years as chief engineer, State Commission; also on water supply, railroad location, and topographic mapping. Knowledge of French. Prefers work with consulting engineers, or firm requiring water power reports. Available now. Eastern United States preferred. C-1138.

POSITIONS AVAILABLE

A SUBSTITUTION COMPANY. Apply by letter to the company, 100 West 11th St., New York, N. Y.

WATER ENGINEER about 35 years' experience in the design and construction of water works and irrigation systems. In New York City, to sell the services of the company.

Membership

(From March 3, to April 6, 1926)

Additions

		Date of Membership.
ANDERSON, Frederick John. City Engr. (Res., 1108 Lincoln Way, West), South Bend, Ind.	M.	Mar. 15, 1926
ANDERSON, George Randolph. Instrumentman, Marland Refining Co. (Res., 300 North 6th St.), Ponca City, Okla.	Jun.	Mar. 15, 1926
ANDERSON, Laurence Edwin. Draftsman, State Dept. of Public Works, 929 Forum Bldg., Sacramento, Calif.	Jun.	Mar. 15, 1926
ANTONACCI, Michael Henry. Box 1058, Stanford University, Calif.	Jun.	Mar. 15, 1926
ARNOLD, David Reeves, Jr. Structural Engr., 143 Park St., Wellington, Ohio.	Assoc. M.	Mar. 15, 1926
BARNETT, Joseph. Asst. Engr., Westchester County Park Comm., 3060 Hull Ave., New York, N. Y.	Assoc. M.	Mar. 15, 1926
BEAUREGARD, Armand Toutant, Jr. Care, International Railways of Central America, Guatemala, Guatemala.	Jun.	Dec. 14, 1925
BELL, Francis Murdoch. Instr., Civ. Eng., Univ. of North Carolina, Box 645, Chapel Hill, N. C.	Jun.	Mar. 15, 1926
BOARDMAN, Harry Clow. Instr., Civ. Eng., Univ. of Illinois (Res., 1108 West Nevada St.), Urbana, Ill.	M.	Mar. 15, 1926
BOOTH, Russell Charles. Div. Engr., Southern California Edison Co., Big Creek, Calif.	M.	Mar. 15, 1926
BORCHGREVINK, Henrik Christian. 939 Sixty-eighth St., Brooklyn, N. Y.	Assoc. M.	Oct. 12, 1925
BRINGHURST, George Ruthven. Asst. Paving Engr., Eng. Dept., City of Houston (Res., 2716 Milam St.), Houston, Tex.	Assoc. M.	Mar. 15, 1926
BROWNELL, Clarence John. Junior Highway Engr., Dept. of Public Works and Bldgs., Div. of Highways, 237 North Monroe St., Peoria, Ill.	Jun.	Mar. 15, 1926
BRYANT, Harlan Moore. With I. W. Jones & Co., Box 102, Milton, N. H.	Assoc. M.	Mar. 15, 1926
BRYSON, Carlyle Hugo. Chf. Engr., Rosemont Water Development for Broadmoor Hotel Co., Broadmoor Hotel, Colorado Springs, Colo.	Jun. Mar. 2, 1915 Assoc. M. Sept. 12, 1916 M. Mar. 15, 1926	
BUETTNER, Otto George Henry. Asst. Engr., I. R. T. Co., 2545 Seventh Ave., Room 307, New York, N. Y.	Jun. May 31, 1910 Assoc. M. Sept. 2, 1914 M. Mar. 15, 1926	
BURGER, Alfred Andrew. Engr. of Constr., George B. Gascoigne, 1149 Leader News Bldg., Cleveland, Ohio.	Jun. June 11, 1917 Assoc. M. Aug. 9, 1920 M. Mar. 15, 1926	
BURKE, George Leo. Engr., Murrie & Co., New York (Res., 11 Fletcher Ave., Mount Vernon), N. Y.	Jun.	Jan. 18, 1926
BURFEE, Lawrence Hanington. 627 Simcoe St., Niagara Falls, Ont., Canada.	Jun.	Mar. 15, 1926
CHAMBERLAIN, George Ripley. Draftsman, Elec. Bond & Share Co., Lincoln Pl., Maspeth, N. Y.	M.	Mar. 15, 1926
CHEN, Loh-Kwen. Eng. Dept., Kiaochow-Tsinan Ry., Tsingtao, China.	Jun.	Oct. 12, 1925
COLVIN, Charles Musick. Engr. of Costs, Armco Culvert & Flume Mfg. Assoc., Middletown, Ohio.	Assoc. M.	Mar. 15, 1926
CONNELL, Maurice Thomas. Asst. Engr., Bureau of Eng., Bridge Div., City Hall (Res., 317 Berkley St., Germantown), Philadelphia, Pa.	Assoc. M.	Mar. 15, 1926
CRANE, Harlan Belden. Prin. Asst. Engr., International Filter Co. (Res., 1043 East Marquette Rd.), Chicago, Ill.	Assoc. M.	Mar. 15, 1926
CROZIER, Bernard Labroquere. Chf. Engr., Dept. of Public Works, City Hall, Baltimore, Md.	Assoc. M. Jan. 19, 1920 M. Mar. 15, 1926	
DALLAS, William Burnside. Asst. Engr., J. J. Albertson, 111 Fourth Ave., Haddon Heights, N. J.	Jun.	Mar. 15, 1926
DEDIC, Richard Jaroslaw. Junior Topographical Engr., U. S. Lake Survey, U. S. Lake Survey Office, Old Custom House, Detroit, Mich.	Jun.	Mar. 15, 1926
DEDOULOFF, Alexander Alexander. 347 Madison Ave., Room 509, New York, N. Y.	Assoc. M.	Dec. 14, 1925
DRESSLER, Harvey Jacob. Civ. and Cons. Engr. (Cellarius & Dressler), 36 East First St., Dayton, Ohio.	M.	Mar. 15, 1926
DUFF, Russell Miles. Hotel Dixie, Titusville, Fla.	Jun.	Oct. 12, 1925
DUNLAP, Vernon Rea. Lt-Commander, C. E. C., U. S. N.; Asst. to Public Works Officer, Navy Yard, New York (Res., 167 Ninety-ninth St., Brooklyn), N. Y.	M.	Mar. 15, 1926
DUVALL, Arndt John. 1059 Hague Ave., St. Paul, Minn.	Jun.	Mar. 15, 1926
DYHRKOPP, Felix Grover. Mgr., Dyhrkopp Eng. Co., 222½ South Illinois Ave., Carbondale, Ill.	Assoc. M.	Mar. 15, 1926
ECKELS, Samuel. Asst. Director, Dept. of Public Works, Allegheny County, 519 Smithfield St., Pittsburgh, Pa.	Assoc. M. Oct. 14, 1919 M. Mar. 15, 1926	
EICHLER, Philip Henry, Jr. 333 Thirteenth St., North, St. Petersburg, Fla.	Jun.	Oct. 12, 1925
ERICKSON, Eric LeRoy. Res. Engr. and Asst. Bridge Engr., State Highway Comm., Baton Rouge, La.	Assoc. M.	Mar. 15, 1926

MEMBERSHIP—(Continued)		Date of Membership.	
EVANS, Henry Moore. Constr. and Designing Engr., Voelcker & Dixon, 312 Morgan Bldg., Wichita Falls, Tex.	Jun. Assoc. M.	Nov. 26, 1923 Dec. 14, 1925	
FAIR, Gordon Maskew. Instr., San. Eng., Harvard Eng. School, 112 Pierce Hall, Harvard Univ., Cambridge, Mass.	Assoc. M.	Mar. 15, 1926	
FAIRCLOUGH, Richard Turton. Field Engr. and Supt., John W. Ferguson Co., 270 Nineteenth Ave., Paterson, N. J.	Assoc. M.	Mar. 15, 1926	
FERGUSON, Phil Moss. Structural Draftsman, Dwight F. Robinson & Co., Inc. (Res., 87 Post Ave., Apartment 44), New York, N. Y.	Jun.	Mar. 15, 1926	
FERNANDES, José de Lasserre. Secy. and Asst. Prof., Geometrical Drawing, Escola Polytechnica, Rua Sao Bernardo 248, Fortaleza, Ceara, Brazil.	Affiliate	May 19, 1924	
FITCH, John Douglass. Designing Draftsman, C. T. Main, 200 Devonshire St., Boston, Mass.	Jun.	Mar. 15, 1926	
FORTIER, Ernest Cleveland. Chf. Engr., Merritt Concrete Products Co. (Res., 1101 Burrell Court), San José, Calif.	Assoc. M.	Mar. 15, 1926	
GALVIN, Charles Broe. Draftsman, Dept. of Docks, City of New York (Res., 448 Central Park West), New York, N. Y.	Assoc. M.	Mar. 15, 1926	
GARRATT, James Ernest. Senior Engr., Headquarters' Office North Jersey Dist. Water Supply Comm., 20 Clinton St., Room 412, Newark, N. J.	M.	Mar. 15, 1926	
GREENE, William Jeff. Asst. Engr., Atlanta & West Point R. R., 178½ Spring St., Atlanta, Ga.	Assoc. M.	Mar. 15, 1926	
GRINTER, Linton Eli. Univ. of Illinois, 201 Eng. Hall, Urbana, Ill.	Jun.	Mar. 15, 1926	
HASSEN MILLER, Wilford Sowle. 1736 Fell St., San Francisco, Calif.	Assoc. M.	Mar. 15, 1926	
HEIDEMA, Pieter Bareld. Surv. and Draftsman, N. Y. C. R. R., 322 Woodworth Ave., Yonkers, N. Y.	Jun.	Mar. 15, 1926	
HICKOX, George Harold. 531 South Van Buren St., Iowa City, Iowa.	Jun.	Mar. 15, 1926	
HILL, Raymond Alva. Associate, Quinton, Code & Hill, 1106 Hollingsworth Bldg., Los Angeles, Calif.	Assoc. M.	July 6, 1920	
HODGES, Thomas Arthur. Office Engr., Elrod Eng. Co., Dallas (Res., 2207 San Antonio St., Austin), Tex.	M.	Mar. 15, 1926	
HOLBROOK, Howard. Asst. Engr., Public Service Comm. and Board of Transportation, New York (Res., 10153 One Hundred and Twenty-Fourth St., Richmond Hill), N. Y.	Assoc. M.	Dec. 14, 1925	
HORNER, Arthur Stewart. Field Engr., The Dutton & Kendall Co. (Res., 2324 Grape St.), Denver, Colo.	Assoc. M.	Mar. 15, 1926	
HUSTED, Alva Guy. Prin. Asst. Engr., San. Eng. Dept., Cuyahoga County, 33 New Court House, Cleveland (Res., 1382 Shawview Ave., East Cleveland), Ohio.	Jun. Assoc. M.	Mar. 15, 1926 Sept. 11, 1917 M. Mar. 15, 1926	
JACOBSON, Gustaf Walfred. Structural Engr., Cutting, Carleton & Cutting (Res., 138 Belmont St.), Worcester, Mass.	Assoc. M.	Mar. 15, 1926	
JEMIAN, Simon Calouds. Designing Engr., Stone & Webster, Inc., Boston (Res., 182 Washington St., Lynn), Mass.	Assoc. M.	Dec. 14, 1925	
JENSEN, Rolf Jaeger. Designer, Gunvald Aus. Co., 244 Madison Ave., New York (Res., 127 Remsen St., Brooklyn, N. Y.)	Jun.	Mar. 15, 1926	
JOHNSON, Clifford. Bridge Engr., State Highway Comm., Box 41, Bismarck, N. Dak.	Assoc. M.	Mar. 15, 1926	
JOHNSON, Cortes. Asst. Engr., City Engr.'s Office (Res., 556 Rhea St.), Long Beach, Calif.	Assoc. M.	Mar. 15, 1926	
KEYS, Reginald Horton. Chf. Engr., Ulen & Co., 37 Rue Academie, Athens, Greece.	Jun. Assoc. M.	June 6, 1899 April 3, 1901 M. Jan. 18, 1926	
KEITH, Laurence Prescott. Mgr., Structural Dept., West Coast Forest Products Bureau, 6111 Kimbark Ave., Chicago, Ill.	Assoc. M.	Mar. 15, 1926	
KENNEDY, George Donald. City Engr., Jackson, Mich.	Assoc. M.	Mar. 15, 1926	
KINCH, Mason Hill. Asst. County Supt. of Highways, Champaign County, 708 West High St., Urbana, Ill.	Jun. Assoc. M.	Nov. 25, 1919 Mar. 15, 1926	
KING, Edward Harrison, Jr. Prof. and Head, Dept. of Physics, St. John's Univ., Shanghai, China.	Assoc. M.	Mar. 15, 1926	
KUELLING, Herbert John. Cons. Engr., Room 1220, First National Bank Bldg., Milwaukee, Wis.	Assoc. M.	Aug. 31, 1915 M. Mar. 15, 1926	
LAU, Alfred. Prin. Asst. Engr., Norman P. Gerhard (Res., 111 White St.), Scarsdale, N. Y.	Assoc. M.	Mar. 15, 1926	
MCCURDY, Horace Winslow. Dredge Capt., Puget Sound Bridge & Dredging Co., 811 Central Bldg., Seattle, Wash.	Assoc. M.	Mar. 15, 1926	
McMANUS, Eugene Joseph. Const. Engr., Geo. Kershaw, Hendersonville, N. C.	Jun. Assoc. M.	May 19, 1924 Dec. 14, 1925	
MELTZER, Joseph. Chf. Engr., Rosenthal Eng. Contr. Co., 226 Jackson St., Brooklyn (Res., 590 Fort Washington, Ave., New York), N. Y.	Assoc. M.	April 17, 1917 M. Mar. 15, 1926	
MEYER, Edward Dycker. Field Engr., Chile Exploration Co., Chuquicamata, Chile.	Jun. Assoc. M.	May 19, 1924 Jan. 18, 1926	
MICHAELS, Ernest Edwin. Chf. Draftsman, Chicago Bridge & Iron Works, 1305 West 105th St., Chicago, Ill.	Assoc. M.	Mar. 15, 1926	
MILLER, Rudolph Nelson. Engr., Rudolph P. Miller, 342 Madison Ave., New York (Res., 24 Midland Ave., White Plains), N. Y.	Jun. Assoc. M.	Nov. 9, 1920 Mar. 15, 1926	

of ship.

1923
1925

1926

1926

1926

1924

1926

1926

1926

1926

1926

1926

1926

1926

1926

1926

1926

1925

1926

1926

1917

1926

1926

1926

1926

1926

1926

1926

1926

1926

1926

1926

1926

1926

1926

1926

1926

1926

1926

1926

1926

1926

1926

MEMBERSHIP—(Continued)

Date of
Membership.

MOORE, Edward McDowell.	Asst. Engr., Biscayne Eng. Co., Key Largo, Fla.	Assoc. M.	Dec. 14, 1925
MORENO, Mariano.	4590 Spuyten Duyvil Parkway, New York, N. Y.	Assoc. M.	Jan. 18, 1926
MURDOUGH, James Harold.	Associate Prof., Civ. Eng., and Dean, Dept. of Civ. Eng., Texas Technical Coll., Lubbock, Tex.	Assoc. M.	Mar. 15, 1926
MUSS, Joshua.	Asst. Township Engr. (Res., 100 Thirty-first St.), North Bergen, N. J.	Assoc. M.	Mar. 15, 1926
NEFF, Nat Harry.	City Engr., Street Supt. and Sewer Supt., City Hall, Santa Ana, Calif.	Assoc. M.	Dec. 14, 1925
NETTLETON, Elwood Thomas.	Engr., Connecticut Quarries Co., Inc., 152 Temple St., New Haven (Res., 68 Carmel St., Hamden), Conn.	Assoc. M.	Mar. 15, 1926
NEUFFER, Arnold.	Designing Engr., Estimator and Checker, Truscon Steel Co. (Res., 4312 Norfolk Ave.), Baltimore, Md.	Assoc. M.	Oct. 12, 1925
NEWMAN, William Arnold.	Associate Prof., Civ. Eng., Univ. of Kentucky (Res., 219 Rand Ave.), Lexington, Ky.	Assoc. M.	Mar. 15, 1926
NORDSTROM, Milton Edward.	3228 Morgan Ave., North, Minneapolis, Ind.	Jun.	Mar. 15, 1926
NOYES, William.	Junior Engr., Hydr. Div., Stone & Webster, Inc., Boston (Res., 1306 Massachusetts Ave., Cambridge), Mass.	Assoc. M.	Mar. 15, 1926
OCHSNER, Emil.	500 West 124th St., New York, N. Y.	Jun.	Mar. 15, 1926
PACKMAN, Ian Buchanan.	Draftsman, J. Edward Ogden Co., Bayonne, N. J. (Res., 524 South 8th Ave., Mount Vernon, N. Y.)	Jun.	Mar. 15, 1926
PALMER, Charles.	Asst. Chf. Engr., Div. of Sewers, Bureau of Eng., Dept. of Public Works (Res., 320 North Lang Ave.), Pittsburgh, Pa.	M.	Mar. 15, 1926
PATON, James Blackwood.	440 South Main St., Henderson, Ky.	Jun.	Dec. 14, 1925
PERRIN, Payson Austin.	Engr., McLennan Constr. Co., Chicago (Res., 15525 Lexington Ave., Harvey), Ill.	Jun.	April 25, 1921
PUGH, Isaac William.	Designing Engr., Bridge Dept., L. V. R. R. (Res., 642 North Main St.), Bethlehem, Pa.	Assoc. M.	Mar. 15, 1926
QUENTIN, William John.	Box 1271, El Paso, Tex.	Jun.	Mar. 11, 1919
REMLEY, John Frank.	Transitman, Eng. Dept., P. R. R., 1730 North Calvert St., Baltimore, Md.	Assoc. M.	Oct. 12, 1925
RIDDLE, Karl.	Chf. Engr., Mizner Development Corporation, West Palm Beach, Fla.	Assoc. M.	Mar. 15, 1926
ROBINSON, Delmar Lee.	Laboratory Asst. to Testing Engr., Colorado State Agri. Coll. (Res., 527 Smith St.), Fort Collins, Colo.	Assoc. M.	Mar. 15, 1926
RODIO, Giovanni.	Cons. Engr., Corso Venezia 14, Milan (3), Italy	Jun.	Mar. 15, 1926
ROSNER, Max.	Chf. Engr., Fridstein & Co., Room 1753, Conway Bldg., Chicago, Ill.	Assoc. M.	Dec. 14, 1925
RUTHERFORD, James Baillie.	Supt., R. D. Richardson Constr. Co. (Res., 1536 Wyoming Ave.), Scranton, Pa.	Assoc. M.	Mar. 15, 1926
RYER, John Bussing.	Civ. and Landscape Engr. (Ryer & Elston), Clearwater, Fla.	Assoc. M.	Mar. 15, 1926
SAMUEL, Thomas Duncan, Jr.	First Asst. Engr., Water Dept., City Hall, Kansas City, Mo.	Assoc. M.	Mar. 15, 1926
SARGENT, Henry Alfred.	3 Ivy St., Boston, Mass.	Jun.	Mar. 15, 1926
SCHAD, Bernard Theodore.	Prof. of Civ. Eng. and Head of Civ. Eng. Dept., Univ. of Dayton, Dayton, Ohio	Assoc. M.	Mar. 15, 1926
SCHAEFER, George Allen.	Supt. of Public Works (Res., 54 Lawn Ave.), Middletown, Conn.	Jun.	Jan. 15, 1923
SCHWARTZ, Lloyd.	Dist. Engr., State Div. of Highways, First National Bank Bldg., Carbondale, Ill.	Assoc. M.	Mar. 15, 1926
SHEPARD, Ralph Nelson.	Asst. Engr. of Constr., The Linde Air Products Co., 30 East 42d St., New York (Res., 114 Valentine St., Mount Vernon), N. Y.	M.	Mar. 12, 1918
SHERIDAN, Howard Augustus.	3 South Front St., Harrisburg, Pa.	Assoc. M.	Mar. 15, 1926
SIBILIA, Mario Bruno.	Designer and Detailer, N. Y. C. R. R., New York, N. Y. (Res., 475 Clifton Ave., Newark, N. J.)	Jun.	Oct. 12, 1925
SMITH, Ralph Adams.	Civ. Engr., Holyoke Water Power Co., 1 Canal St. (Res., 9 Arlington Ave.), Holyoke, Mass.	Assoc. M.	Nov. 25, 1919
SMITH, Stanley.	Asst. Chf. Structural Engr., The Ballinger Co., 105 South 12th St. (Res., 5662 Hadfield St.), Philadelphia, Pa.	Assoc. M.	Mar. 15, 1926
SNETHLAGE, John Bernard.	Box 116, Basking Ridge, N. J.	M.	Nov. 25, 1919
SOMMERVILLE, Donald Laing.	Engr. in Chg., P. R. R., Canton to Bayard Cut-Off, Hotel Minerva, Minerva, Ohio	Assoc. M.	Mar. 15, 1926
SPARK, Harry Simpson.	Asst. Engr., Harbour Commrs. of Montreal, 57 Common St., Montreal, Que., Canada	Assoc. M.	Mar. 15, 1926
STERN, Frank Ernest.	Designing Engr., Welland Ship Canal, St. Catharines, Ont., Canada	Assoc. M.	Jan. 2, 1912
STUBER, Harry William.	Draftsman, Elec. Bond & Share Co., New York, N. Y. (Res., 790 Park Ave., Weehawken, N. J.)	M.	Mar. 15, 1926
TANNER, John Raymond.	With Everglades Eng. Co., 605 Citizens Bank Bldg., West Palm Beach, Fla.	Jun.	Mar. 15, 1926
TAYLOR, Bill Northcutt.	Engr., The California Co., Box 612, Colorado, Tex.	Assoc. M.	May 19, 1924

MEMBERSHIP—(Continued)

		Date of Membership.
TEEGEN, Carl John. With Wm. Wilgus, 233 Broadway, New York, N. Y.	Jun.	Mar. 15, 1926
THOMSEN, Samuel Locke. Gen. Mgr. and Chf. Engr., The Gibson Island Co., Pasadena, Md.	Assoc. M.	May 31, 1916
TILSON, George Henry. Insp., Consolidated Gas Co., 162 Pennsylvania Ave., Rosebank, N. Y.	M.	Mar. 15, 1926
TOZZER, Carl Henry. Prin. Asst. City Engr. (Res., 235 Clover Ave.), Marion, Ohio.	Jun.	Mar. 15, 1926
TUCKER, Elliott Jerome., Cons. Engr., Box 294, Vicksburg, Miss.	Assoc. M.	Mar. 15, 1926
WAITE, Guy Bennett, Jr. Designing Engr., Guy B. Waite Co., 413 East 31st St., New York, N. Y.	Assoc. M.	Mar. 15, 1926
WARD, Ronald Davies. Res. Engr., Edward Flad & Co., St. Louis (Res., 109 West Cedar Ave., Webster Groves), Mo.	Jun.	Oct. 10, 1921
WILLSON, Clarence Ardry. Structural Engr. for State Archt. of Wisconsin (Res., 323 West Wilson St.), Madison, Wis.	Assoc. M.	Mar. 15, 1926
WILLSON, Frederick Newton. Prof. Emeritus of Graphics and Eng. Drawing, Princeton Univ., Box 63, Princeton, N. J.	Jun.	Sept. 5, 1883
WINTER, John Harold. Care, Federal Power Co., Anniston, Ala.	Affiliate	Oct. 4, 1892
WOLMAN, Abel. Chf. Engr., State Dept. of Health, 16 West Saratoga St., Baltimore, Md.	M.	Mar. 15, 1926
	M.	Mar. 15, 1926

Reinstatements

	Date of Reinstatement.
PHILLIPS, Augustus Lyon.	Mar. 15, 1926
POPE, James Bond.	Mar. 15, 1926

ASSOCIATE MEMBERS

ELLIOTT, Allen Edrick.	Mar. 15, 1926
------------------------	---------------

Resignations

	Date of Resignation.
MOSER, Albert Leo Brecht.	Mar. 15, 1926
NEWHALL, William Barrett.	Mar. 15, 1926

Deaths

DONNELLY, Joseph Francis Sinnott. Elected Associate Member, August 31, 1915; died March 5, 1926.
EASTHAM, Robert Francis. Elected Member, September 10, 1923; died February 10, 1926.
ENDICOTT, Mordecai Thomas. (Past-President.) Elected Member, April 4, 1877; died March 6, 1926.
ERNST, Oswald Herbert. Elected Member, July 4, 1888; died March 21, 1926.
FINLEY, William Henry. Elected Member, February 4, 1903; died March 17, 1926.
HASSKARL, Joseph Frederick. Elected Associate Member, March 5, 1902; Member, November 1, 1904; died March 5, 1926.
LEHLBACH, Gustave. Elected Member, March 7, 1883; died March 26, 1926.
LOCKWOOD, Willard Datus. Elected Junior, April 3, 1894; Associate Member, October 7, 1896; Member, October 2, 1906; died February 22, 1926.
MIDOLO, Mario John. Elected Junior, December 15, 1924; died March 11, 1926.
RICHE, Charles Swift. Elected Member, September 2, 1914; died March 20, 1926.
RIGHTS, Eugene Jesse. Elected Associate Member, March 2, 1909; died February 15, 1926.
SHIVELY, Clarence Owen. Elected Associate Member, April 19, 1920; died March 25, 1926.
STRACHAN, Joseph. Elected Associate, Member May 4, 1892; Member, May 4, 1898; died March 20, 1926.
WILLIAMS, James Harold. Elected Associate Member, July 9, 1923; died March 4, 1926.

Total Membership of the Society, April 6, 1926.

Members	5 093
Associate Members	5 314
Corporate Members	10 407
Honorary Members	15
Juniors	884
Affiliates	151
Fellows	8
Total	11 465

rs.

ip.

26
16
26

26

26

26

21

26

26

83

92

26

26

26

nt.

26

26

26

26

26

26

26

26

ed

6.

ed

ed

ed

n-

7,

6.

6.

ed

ed

ed

ed

ed

ed

ed

ed

ed

ed

ed

ed

ed

ed

ed

ed